

Place & Movement Planning and Design Guidance for Hertfordshire Part 2

Hertfordshire County Council Highways and Growth & Environment

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Hertfordshire

Chapter 1

Introduction to The Hertfordshire Vision

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Introduction

- 1.1** This Part of the Place & Movement Design Guidance sets out Hertfordshire's vision for sustainable and responsible development and key policy statements to inform and influence the two stages of Site / Project Validation and Master Planning prior to entering pre-application discussions.
- 1.2** HCC is committed to supporting economic growth and enabling vibrant communities, whilst protecting the environment and addressing climate change.
- 1.3** In delivering sustainable and responsible growth it is essential that the built environment is safe, sympathetic to its surroundings, sustainable in its use of natural resources and supportive of active and healthy citizens.
- 1.4** There is a golden thread from the high level policies set out in this Part of the guidance through to detailed standards and specifications for key strands including:
 - **Place & Movement:** Place and Movement (P&M) sets the bases in the new guidance for deciding which activities should be prioritised and where the balance of provision should lie. Collectively, they will help identify appropriate highway provision at the master planning stage.
- The guidance also includes design menu cards that will help designers select the appropriate design speeds, features and design standards for each P&M category
- **Sustainability including Health and Future Ready:** The vision is to create and maintain highways in Hertfordshire in a sustainable and balanced way, enhancing the natural environment and creating opportunities for Hertfordshire's communities. The highways network shall actively support healthier, cleaner and more active travel, and be resilient and flexible to changes to future technological, societal, resource and climate-based trends.
- **Asset Management:** An understanding of the life cycle of assets, the selection of features and materials that HCC is prepared to adopt and maintain will influence master planning, planning application preparation, detailed design and the adoption strategy.
- 1.5** In following this guidance, proposals should demonstrate compliance to Local Transport Plan 4 (LTP4) policies, which is tested at the gateways at the end of each of these two stages in accordance with the testing regime set out in Part 1 Chapter 3.

1.6 This part of the Place & Movement Planning and Design Guide (P&MPDG) covers the standardised project stages and the LTP4 Compliance gateways for 'Validation' and Master Plan:

- DfT Local Major Projects Business Cases
- HCC Medium Sized and Major Capital Projects included in the LTP4 Delivery Plan
- Minor schemes HCC Integrated Transport Projects in the Integrated Works Programme
- Developments

1.7 The term Scheme Promoter has been adopted and applied throughout the document for simplicity and, given that the Scheme Promoter has ultimate responsibility for their project. However, the guidance is also aimed at their professional advisors including architects, planners, transport consultants and highway engineers and thence their contractors and suppliers.

Place & Movement Planning and Design Guide Part 2				
Project Type	SOBC Preparation	SOBC Approval	OBC Preparation	OBC
HCC LTP Delivery Plan Transport Projects	Stage 1: Initiation	Gateway 1: Inception	Stage 2: Option Testing	Gateway 2: Feasibility
	Test/confirm scheme strategies against published policies, identifying constraints and risk assumptions	Policy context in place. Options in place for testing. Include scheme in LTP Delivery Plan	Identify preferred option for scope, nature, route	Preferred option Approved
HCC ITP Schemes	Stage 0	Stage 1 - Study/Feasibility		
	Project Validation	Stage 1a Commissioning	Stage 1b Feasibility	Stage 1c Approvals
Developments	Site Validation	Site complies with published policies. Constraints and risk assumptions identified.	Master Planning	Movement corridors, proposed land use zones and sustainability strategies demonstrate good development P&M Categories agreed
LTP4 Compliance Testing Gateways		Test 1: Validation Understanding Place & Movement		Test 2A: Master Plan - Preferred Option

Hertfordshire County Council Policies & Strategies

- 2.1** This new guidance has been published to ensure that all proposed improvements to the network are focused on delivering the objectives of LTP4 and its supporting documents, whilst encouraging innovation, and to ensure that the resulting works have a quality and consistency sympathetic to their surroundings and are sustainable.
- 2.2** The design standards and advice in this Guide are a local interpretation and articulation of national policies and guidelines aimed at delivering Hertfordshire County Council's LTP4 policies and supporting strategies as referenced in Chapter 2.
- 2.3** It is not the aim of this guidance to list and repeat national policies and standards, but references will be made to them in the relevant chapters, where they help describe Hertfordshire's requirements.

Sustainability

- 3.1** Chapter 3 describes how environmentally sustainable, healthy and future ready movement networks will be delivered in Hertfordshire.
- 3.2** The objectives and requirements set out in the chapter are to be applied in design work and by Scheme Promoters who will be expected to respond in a way that is demonstrably pragmatic, proportionate and represents whole life value.

Validation & Master Planning

- 4.1** Chapter 4 provides guidance on how due consideration of transport and its relationships to land-use planning and the environment through the 'Site Validation' and 'Master Planning' stages of a development or the 'Initiation and Feasibility' stages for prospective Transport Projects for the LTP Delivery Plan can help deliver Hertfordshire's vision.
- 4.2** The chapter also discusses and defines sustainable modes for the purpose of the guidance and, particularly to provide clarity when transport impacts and mitigations are being considered and discussed.

Place & Movement

- 5.1** To aid the practical application of the LTP4 policies Hertfordshire has developed a 'Place and Movement' (P&M) matrix, which recognises the different functionalities that roads and streets will need to have.
- 5.2** As described in Chapter 5, Place and Movement provides a basis for deciding which activities should be prioritised and where the balance of provision should lie.
- 5.3** The P&M matrix will help identify appropriate highway provision at the master planning stage.



Planning for Maintenance & Operation

- 6.1** Chapter 6 summarises Hertfordshire County Council's approach, as Highway Authority, to maintaining and operating its highway network.
- 6.2** An understanding of the approach including the life cycle of assets, the selection of features and materials that HCC is prepared to adopt and maintain will influence master planning, planning application preparation, detailed design and the long-term stewardship of new schemes and developments.
- 6.3** The application of the P&M matrix helps identify appropriate approaches to maintenance and operation.

Chapter 2

Policies

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- 1 Introduction
- 2 Hertfordshire County Council Policies & Strategies
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Introduction

- 1.1** The design standards and advice in this Guide are a local interpretation and articulation of national policies and guidelines aimed at delivering Hertfordshire County Council's (HCC's) Local Transport Plan 4 (LTP4) policies. As such it is an LTP4 supporting document.
- 1.2** It is not the aim of this guidance to list and repeat national policies and standards, but references will be made to them in the relevant chapters, where they help describe Hertfordshire's requirements.



Hertfordshire County Council Policies & Strategies

2.1 This Guide has been published to ensure that all proposed improvements to the network are focused on delivering the objectives of LTP4 and its supporting documents, whilst encouraging innovation, and that the resulting works have a quality and consistency that are sympathetic to their surroundings and are sustainable.



2.2 LTP4 has been designed to support HCC's Corporate Plan (2022-25) and its 4 key priority areas:

- A cleaner and greener environment
- Healthy and fulfilling lives for our residents
- Sustainable, responsible growth in our county
- Excellent council services for all



2.3 The Corporate Plan

2.4 LTP4 also supports HCC's Sustainability Strategy, which was developed in response to its declaration of a Climate Emergency in July 2019.

2.5 The following are the policies extracted from Hertfordshire's LTP4.



Policy 1: Transport User Hierarchy

To support the creation of built environments that encourage greater and safer use of sustainable transport modes, the county council will in the design of any scheme and development of any transport strategy consider in the following order:

- Opportunities to reduce travel demand and the need to travel
- Vulnerable road user needs (such as pedestrians and cyclists)
- Passenger transport user needs
- Powered two-wheeler (mopeds and motorbikes) user needs
- Other motor vehicle user needs

Policy 2: Influencing land use planning

The county council will encourage the location of new development in areas served by, or with the potential to be served by, high quality passenger transport facilities so they can form a real alternative to the car, and where key services can be accessed by walking and cycling.

Policy 3: Travel Plans and Behaviour Change

The county council will encourage the widespread adoption of travel plans through:

- a) Working in partnership with large employers, businesses and other organisations to develop travel plans and implement Smarter Choices measures.
- b) Seeking the development, implementation and monitoring of travel plans as part of the planning process for new developments.
- c) Supporting school travel plans, and working closely with parents, pupils, teachers and local residents to deliver a network of more sustainable transport links to school.

The application of personalised travel planning techniques, marketing and other behavioural change initiatives will be

considered when delivering physical transport improvements to maximise the potential to achieve modal shift.

Policy 4: Demand Management

The county council considers greater traffic demand management to be essential in the county's urban areas in the next five years to achieve modal shift and improve sustainable travel provision. This can only currently be achieved efficiently and effectively through parking restrictions and charging applied to on-street, off-street and potentially at workplace parking. The county council will work with the district and borough councils and other key stakeholders to develop locally appropriate strategies.

Policy 5: Development Management

The county council will to work with development promoters and the district and borough councils to:

- a) Ensure the location and design of proposals reflect the LTP Transport User Hierarchy and encourage movement by sustainable transport modes and reduced travel demand.
- b) Ensure access arrangements are safe, suitable for all people, built to an adequate standard and adhere to the county council's Highway Design Standards.

- c) Consider the adoption of access roads and internal road layouts where they comply with the appropriate adoption requirements and will offer demonstrable utility to the wider public. Where internal roads are not adopted the county council will expect suitable private management arrangements to be in place.
- d) Secure developer mitigation measures to limit the impacts of development on the transport network, and resist development where the residual cumulative impact of development is considered to be severe.
- e) Require a travel plan for developments according to the requirements of 'Hertfordshire's Travel Plan Guidance'.
- f) Only consider new accesses onto primary and main distributor roads where special circumstances can be demonstrated in favour of the proposals.
- g) Resist development that would either severely affect the rural or residential character of a road or other right of way, or which would severely affect safety on rural roads, local roads and rights of way especially for vulnerable road users. This should include other routes which are important for sustainable transport or leisure.
- h) Ensure that any new parking provision in new developments provides facilities for electric charging of vehicles, as well as shared mobility solutions such as car clubs and thought should be made for autonomous vehicles in the future.

Policy 6: Accessibility

The county council will seek to increase the ease with which people, particularly disadvantaged groups, can access key services, by:

- a) Working in partnership with key stakeholders such as bus and rail operators, community transport operators, the voluntary sector and public service providers.
- b) Supporting transport services which could include providing resource for bus and other transport services.
- c) Addressing the barriers to accessibility particularly regarding active modes and for people with impaired mobility.
- d) Promoting travel options and facilitating accessible travel information provision, including open data initiatives.
- e) Improving travel choices and options, including support for the provision of shared mobility initiatives.

Policy 7: Active Travel - Walking

The county council will seek to encourage and promote walking by:

- a) Implementing measures to increase the priority of pedestrians relative to motor vehicles, especially in town centres, and creating walking friendly town and neighbourhood centres.
- b) Delivering infrastructure to provide safer access to key services, and pedestrian facilities to enable and encourage walking.

- c) Identifying and promoting networks of pedestrian priority routes.
- d) Promoting walking as a mode of travel and for recreational enjoyment.
- e) Supporting the implementation of the Rights of Way Improvement Plan.

Policy 8: Active Travel - Cycling

The county council aims to deliver a step change in cycling, through:

- a) Infrastructure improvements, especially in major urban areas to enable and encourage more cycling.
- b) Implementing measures to increase the priority of cyclists relative to motor vehicles.
- c) Improved safety for users including delivery of formal and informal cycle training schemes.
- d) Supporting promotion campaigns to inform, educate, reassure and encourage cycling provision and education, such as Bikeability.
- e) Facilitating provision of secure cycle parking.

Policy 9: Buses

The county council will promote and support bus services to encourage reduced car use by:

- a) Supporting the delivery of infrastructure including bus priority measures, focussed on a core bus network, and by minimising bus service disruption from road congestion and the effects of road works.
- b) Providing and maintaining all bus stops, and other bus related highway infrastructure, to a consistent quality and standard across the county.
- c) Utilising new powers afforded to local authorities through the Bus Services Act 2017 as appropriate.
- d) Reviewing, procuring and supporting cost effective and efficient bus services to improve accessibility and respond to existing and potential passenger needs. Review existing services and take account of enhanced security provision.
- e) Working with a wide range of partners through the Intalink Quality Partnership to achieve improvements in facilities and services to improve the end-to-end journey by multi-modal interchange, accessibility, security and the journey experience.
- f) Working with partners to develop appropriate passenger fares, encourage the development of smart ticketing and to improve the provision and accuracy of passenger information.
- g) Working with partners to promote bus services as an option for work and school journeys and promote and publicise the passenger transport network through a variety of media.

Policy 10: Rail

The county council will support and promote rail use in the county, especially in order to reduce car use. To do this it will:

- a) Work with the rail industry and other partners to seek improvements to train services in respect of capacity, journey times, frequency and range of destinations served.
- b) Work with the rail industry and other stakeholders to make rail travel more attractive through improved fares and ticketing, upgraded station facilities and better access and interchange by sustainable modes of transport.
- c) Support Community Rail Partnerships in the county.
- d) Publish a Rail Strategy setting out how the county council's objectives can be achieved.

Policy 11: Airports

The county council, working in partnership with neighbouring local authorities and airport operators, will seek improvements to surface access to Luton and Stansted Airports, and promote and where possible facilitate a modal shift of both airport passengers and employees towards sustainable modes of transport.

The county council is opposed to new runway development at Luton and Stansted Airports.

Policy 12: Network Management

As part of its Network Management Duty the county council will seek to manage, and where feasible reduce traffic congestion, prioritising strategic routes. Activity will focus on making more efficient use of highway network capacity via:

- a) Use of Intelligent Transport Systems and small-scale traffic management interventions.
- b) Maintaining a Network Management Strategy which will include the county council's road network hierarchy and associated policies.
- c) Reducing levels of single occupancy car use and encouraging travel by walking, cycling and passenger transport.
- d) Sharing data (open data) and supporting the use of technology to provide up to date and accessible information for all network users.
- e) Control of on-street vehicle parking in line with the Network Management Strategy.
- f) Managing street works and minimising network disruption.

Policy 13: New Roads and Junctions

The county council will work closely with partners including Highways England (National Highways), districts and major scheme developers to design new transport infrastructure, following application of the Transport User Hierarchy, to manage existing demand and that of planned development. Future capacity that may be required beyond this could be safeguarded but should not be released until necessary to avoid inducing demand.

Policy 14: Climate Change Network Resilience

The county council, as part of its response to climate change adaptation, will design, construct, maintain and operate all infrastructure in the light of the risk from a changing climate. The same principles will be applied to infrastructure provided by other organisations including developers.

Policy 15: Speed Management

The county council through its Speed Management Strategy, a joint working strategy with the Police, will seek to manage the network to achieve appropriate speeds in the interests of safety, other road users, and the environment.

Policy 16: Freight and Logistics

The county council will seek to manage freight and logistics traffic, by:

- a) Encouraging HGVs to use the primary route network.
- b) Providing clear advice to local planning authorities in respect of highways and freight implications of new development proposals.
- c) Encouraging a shift from road-borne freight to less environmentally damaging modes, including rail, water and pipelines.
- d) Supporting the formation of Quality Partnerships between interested parties.
- e) Monitoring changes in HGV and LGV activity to inform possible solutions which reconcile the need of access for goods and services with local environment and social concerns.
- f) Supporting improvements in HGV provision in the county, including overnight parking, in appropriate locations.
- g) Utilising traffic management powers, where appropriate to do so, to manage access and egress from specific locations.

Policy 17: Road Safety

The county council will seek to continually improve safety on the county's roads, working towards an ultimate vision of zero fatalities and serious injuries, by:

- a) Working with partners, in particular through the Hertfordshire Road Safety Partnership to deliver targeted, effective and appropriate road safety measures.
- b) The development of a Safe Systems approach that seeks to co-ordinate a mix of safer roads, safer speeds, safer vehicles, safer road users and post-collision response with a focus on casualty reduction.
- c) Using latest data analysis and intelligence led techniques to target and evaluate measures.

Policy 18: Transport Safety and Security

The county council will seek to improve the perception of safety and security on Hertfordshire's transport system where this could deter people from travelling, particularly by active modes and passenger transport. This includes ensuring the county's transport system is resilient and prepared for instances of major alert.

Policy 19: Emissions reduction

The county council will reduce levels of harmful emissions by:

- a) Promoting a change in people's travel behaviour to encourage a modal shift in journeys from cars to walking, cycling and passenger transport;
- b) Addressing any barriers to and supporting the uptake of ULEVs in the county, particularly where this can positively affect areas with identified poor air quality;
- c) Reducing emissions from its operations.

Policy 20: Air Quality

The county council will seek to reduce the impact of poor Air Quality on human health, by:

- a) Investigating the use of Clean Air Zones;
- b) Working with district/borough councils to monitor and assess air pollution levels and working in partnership with them to deliver any declared AQMA joint action plans;
- c) Implementing, monitoring and reviewing the county council's Air Quality Strategic Plan.

Policy 21: Environment

The county council will seek to:

- a) Ensure the impacts of traffic and transport infrastructure on the natural, built and historic environment are minimised.
- b) Protect and enhance the quality of public spaces both in urban and rural areas.
- c) Minimise the visual intrusion of highways infrastructure in order to reduce street clutter.
- d) Minimise light pollution and conserve energy from street lighting and signage illumination.
- e) Minimise noise issues arising from transport where practical to do so.

Where highway improvements are being undertaken the county council will:

- f) Minimise and or mitigate the adverse physical impact on the landscape and environment and will try to secure significant and demonstrable environmental gains.

Policy 22: Asset Management

The county council will:

- a) Ensure the Highway Infrastructure Asset Management Plan fully considers how it can support delivery of the LTP objectives & policies, such as with regard to safety, accessibility, active travel and environmental impact.
- b) Identify and apply industry-leading good practice to the management of all transport assets.
- c) Maximise the opportunity for investment to maintain and improve the condition of the transport network.
- d) Seek value for money for all transport assets and minimise future maintenance liabilities as far as possible.

Policy 23: Growth and Transport Plans

The county council will produce and maintain a series of Growth and Transport Plans (GTPs) covering different sub areas of Hertfordshire. Each plan will consider current and future challenges and identify interventions aligned to LTP objectives. The GTPs will also be informed by and in turn help to inform Local Plans and Infrastructure Delivery Plans which are prepared by the district/borough authorities in Hertfordshire.

2.6 The key policy and strategy documents supporting LTP4 that will influence the planning and design of developments and highway projects are:

Accessibility Strategy

Active Travel Strategy

Highway Infrastructure Asset Management Plan

Network Management Strategy

Road Safety Strategy

Intalink Bus Strategy

Rail Strategy

Growth and Transport Plans

Rights of Way Improvement Plan

EV Strategy

A414 Corridor Strategy

Local Cycle and Walking Infrastructure Plans

Speed Management Strategy

Sustainable Modes of Travel to School Strategy

Rural Transport Strategy

Air Quality Strategy



- 2.7 Spatial **Growth & Transport Plans** articulate policies and objectives for localised areas and corridors of Hertfordshire
- 2.8 Hertfordshire's **Highways Infrastructure Asset Management Plan** (HIAMP), sets out HCC's approach to asset management
- 2.9 The **Accessibility Strategy** aims to provide an assessment of the accessibility of key services and facilities including education, employment, health, leisure and shopping in Hertfordshire for residents of the county
- 2.10 The **Active Travel Strategy** aims to encourage walking and cycling trips to improve health, the environment and the economy whilst tackling traffic congestion.
- 2.11 The **Air Quality Strategy 2019** sets out, at a strategic level, the County Council's position on air quality.
- 2.12 The **Intalink Bus Strategy** outlines plans to grow the local bus network and improve patronage.
- 2.13 The **Rights of Way Improvement Plan (3rd edition)** provides a context for the future management, of and investment in the Rights of Way network
- 2.14 The **Rail Strategy** sets the strategic framework against which decisions regarding future franchises and investment in key elements of infrastructure can be identified and prioritised.
- 2.15 The **Road Safety Partnership Performance Plan** seeks to promote a safer and greener highway in order to reduce and prevent road casualties.
- 2.16 The **Rural Transport Strategy** aims to ensure that transport services in rural areas enable people to access important destinations and services. It also seeks to encourage residents to travel by methods other than car. This is supported by the **Rural Transport Best Practice Study**, which researches best practises regarding rural sustainable transport
- 2.17 The **Sustainable Modes of Travel Strategy**, which is updated annually, sets out the vision to increase opportunities for children and young people to travel to, from and between schools and colleges by sustainable modes. It provides a breakdown of existing school travel patterns and outlines the actions and processes that will be adopted to improve the viability of sustainable travel.
- 2.18 The **Speed Management Strategy** aims to enhance the quality and vitality of town centres, preserve the character and quality of the Hertfordshire environment, reduce carbon emissions whilst making journeys and their impact safer and healthier.

2.19 The **LTP4 Strategic Environmental Assessment (SEA) Report** details how the recommendations from the assessments and consultations have influenced the development of the plan.

2.20 All of these documents can be found on HCC's website at <http://www.hertfordshire.gov.uk/LTP>.



Local Planning Authority Policy

- 3.1** Each of the ten district and borough councils in Hertfordshire act as the Local Planning Authority (LPA) for the majority of planning issues in their administrative area.
- 3.2** They are each required to publish a Local Plan, which will set out the LPA's detailed policies and specific proposals for the development and use of land which will guide its day-to-day planning decisions.
- 3.3** Policies in Local Plan may include those which relate to the whole or part of the plan area. The policies set out the criteria which will be used to judge whether planning applications should be permitted.
- 3.4** For larger individual sites identified in the Local Plan, a development brief is normally required. This can be prepared either by the District or Borough Council, or the scheme promoter in agreement with the District or Borough Council. The brief will indicate the acceptable uses, the desired form of development and any other requirements including access requirements.
- 3.5** Area Action Plans (AAPs) will be published when there is a need to provide the planning framework for areas where significant change or conservation is needed.
- 3.6** Local Planning Authorities may also produce Supplementary Planning Documents (SPD) as a means of setting out more detailed guidance on the way in which the policies in the plan will be applied in particular circumstances or areas.
- 3.7** Local Planning Authorities will prepare SPDs on matters such as parking standards and planning obligations. Local Plan policies and SPD are different in every District or Borough. Specific information is available from the individual Local Government bodies.
- 3.8** Hertfordshire and its 10 borough and district councils jointly support the [Building Futures initiative](#). This provides information to designers on achieving sustainable and high quality design on new development schemes in Hertfordshire.
- 3.9** In Hertfordshire's top two tiers of local government the district and borough councils are the Local Planning authorities (LPAs), which have the responsibility for setting and agreeing parking standards for new developments as part of their planning policies. In doing so they consult the Highway Authority.

Neighbourhood Planning

- 4.1** The Localism Act 2011 provided a new statutory regime for neighbourhood planning, which is a tier of Planning Policy that empowers communities to shape the development and growth of a local area.
- 4.2** Neighbourhood Plans must be in conformity with the relevant District Plan and the National Planning Policy Framework (NPPF). Decisions on planning applications will be made using both the local plan and the neighbourhood plan, and any other material considerations.
- 4.3** In Hertfordshire Neighbourhood Plans are generally initiated by town and parish councils where there are the three tiers of local government. Elsewhere they are led by local community groups.
- 4.4** Details of neighbourhood planning activity can be obtained from the associated district or borough council.



Hertfordshire Health & Wellbeing

5.1 This [Health and Wellbeing Planning Guidance](#) published by Hertfordshire County Council, in its role as the Public Health Authority, sets out seven themes to incorporate into the planning of new developments to ensure they are health promoting and sustainable.



Chapter 3

Sustainability, Health & Future Ready

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- 11 HCC policies that have informed this guidance



Introduction

- 1.1 The provision of transport has a key role to play in facilitating economic growth and delivering sustainable housing development. This chapter describes how environmentally sustainable, healthy and future ready movement networks will be delivered in Hertfordshire.
- 1.2 **HCC's vision is to create and maintain places and movement networks in Hertfordshire in a sustainable and balanced way, enhancing the natural environment and creating opportunities for our communities.**
- 1.3 **HCC will work with its supply chain to create a movement network that actively supports healthier, cleaner and more active travel, and that is resistant and flexible to changes to future technological, societal, resource and climate-based trends.**
- 1.4 The objectives and requirements set out in this chapter are to be applied by Scheme Promoters who are expected to respond in a way that is demonstrably pragmatic, proportionate and represents whole life value.
- 1.5 The reference to Scheme Promoters includes their designers, professional advisors, their construction and wider supply chains.
- 1.6 HCC's own supply chain shall deliver all the requirements set out in this guidance unless it is agreed with HCC that there is a defensible and agreed-by-consensus reason(s) for not doing so.
- 1.7 HCC holds various statutory responsibilities as Highways & Transport Authority, Minerals & Waste Planning Authority, Survey Authority in respect of Rights of Way, Lead Local Flood Authority and Public Health body.
- 1.8 Third party Scheme Promoters shall conform to the requirements set out in this chapter that HCC has statutory responsibilities for. These requirements are prefaced by shall.
- 1.9 It is strongly recommended that third party scheme promoters should meet the remaining requirements set out in this chapter.

- 1.10** This guidance necessitates a systemic approach to, and presumption in favour of, sustainable development across the county.
- 1.11** Most of the themes and ambitions set out in this chapter are captured from the Sustainable Hertfordshire Strategy and Local Transport Plan 4, which have used as the main foundations for action.
- 1.12** The **Sustainable Hertfordshire Strategy** builds upon work already undertaken in the region and sets out a series of bold ambitions and targets (for 2030 and 2050) for environmental best practice. It describes how HCC will be a leader in its own operations, and how it will enable and inspire others in the County to take action on sustainable development.
- 1.13** The Strategy takes full cognisance of the UN's Sustainable Development Goals, and makes commitments in relation to greenhouse gas management (GHG), climate resilience, biodiversity, materials and waste management, and cleaner air.
- 1.14** **Local Transport Plan 4** seeks to accelerate the transition to a balanced environment in which all forms of transport are catered for. In this, it seeks to encourage a switch from the private car to sustainable transport (walking, cycling and passenger transport) wherever possible.
- 1.15** The underlying reasons for this transition are to make the transport network better connected, more resilient, more accessible, a facilitator of active travel behaviour, cleaner (air quality), and more prosperous.
- 1.16** The process for responding to this guidance must be balanced with the requirement to deliver Environmental Impact Assessments (EIA) for development that falls under the Town & Country Planning Act. Where synergies, benefits and efficiencies can be established and taken forward, this will be welcomed by HCC.
- 1.17** This guide is neither a substitute nor alternative to legal compliance, but it has been designed to help those working on movement networks in Hertfordshire (particularly at the pre-planning stage) to understand their roles and responsibilities for delivery, and to provide guidance on good and best practice.

- 1.18** The following checklists are aimed at helping Scheme Promoters to articulate a comprehensive approach to sustainable transport infrastructure. The checklists link to the commitments, objectives and targets of HCC Environment & Infrastructure departmental Sustainability Action Plan, to ensure the relationship between these documents is clear.
- 1.19** Those applying this guidance are responsible for collating and presenting information on sustainable development to HCC for approval prior to and as part of the planning process.
- 1.20** More information and support on delivering sustainable movement networks can be obtained by contacting engaging with HCC Highways in their preapplication advice service or via Planning Performance Agreement.



Energy and Carbon

Sustainable Hertfordshire Strategy

- Carbon neutral for our own operations by 2030.
- A net zero greenhouse gas emissions county before 2050 from our 2018/19 baseline.
- Promote zero carbon travel and zero carbon energy infrastructure.
- Installation of EV infrastructure to aid the transition to net-zero.
- Replace operational equipment with low carbon, low emission alternatives.

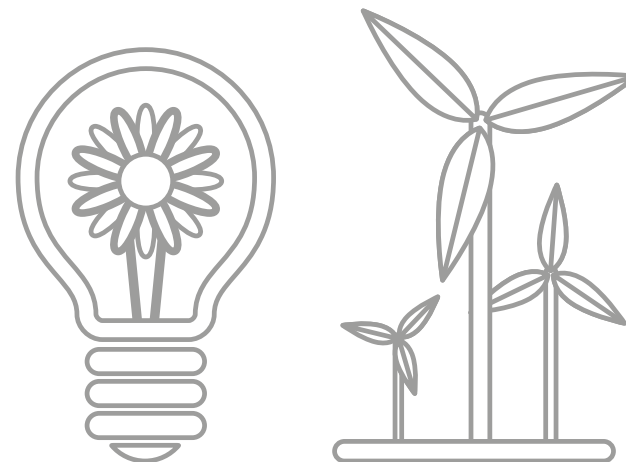
LTP4

LTP4 Core Objective 7 commits to reducing carbon emissions across the county.

LTP4 also notes that transport must contribute positively to urban renewal and regeneration, whilst minimising negative impacts on both the man made and natural environment (including carbon dioxide emissions).

Overarching objective

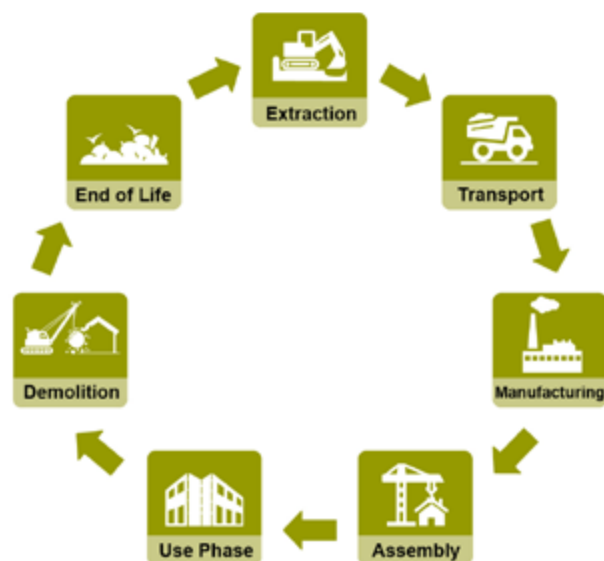
Quantify and demonstrate Green House Gas (GHG) reductions across the lifecycle of movement networks. Reductions achieved will be dependent on the scale and nature of the scheme but will be expected to be commensurate with industry good practice.



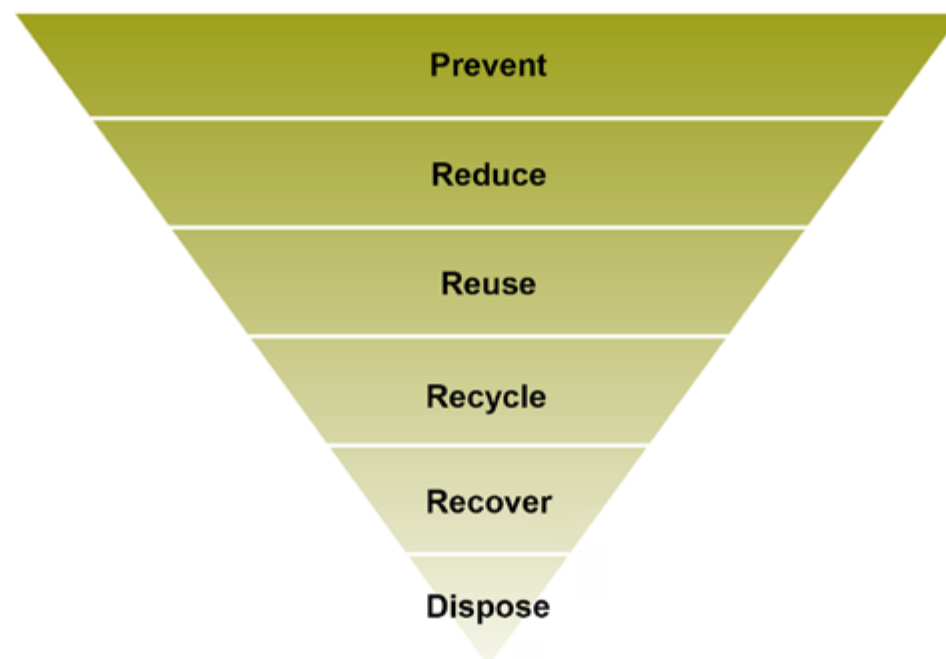
Requirements

The carbon impacts of the design should be considered across all stages of the asset lifecycle. This includes key lifecycle stages:

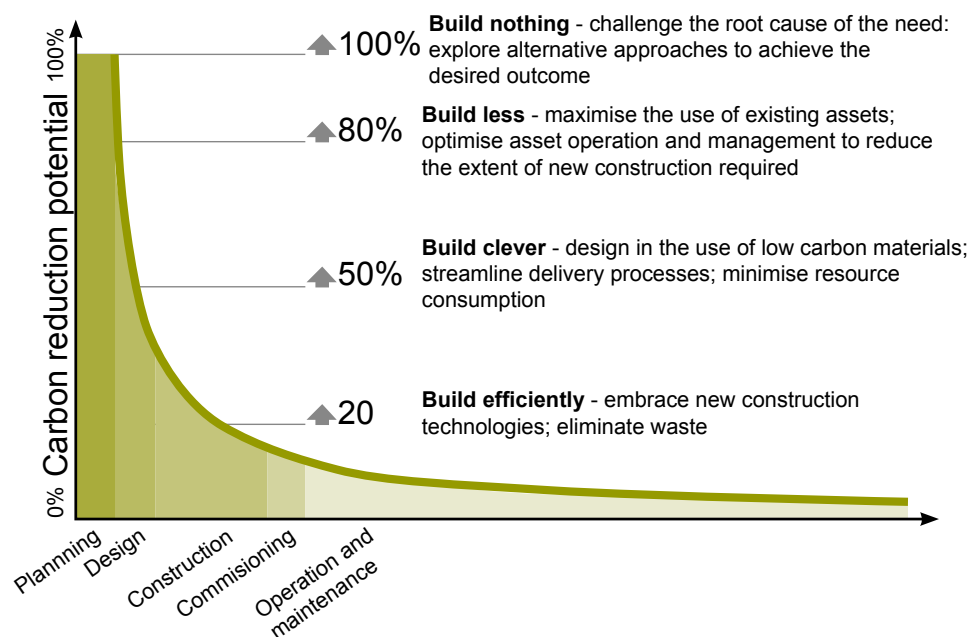
- **Embodied carbon** – CO₂ emitted from extracting, transport, manufacturing and assembly of products and materials;
- **Lifetime carbon** – CO₂ burdens from operation and maintenance activities;
- **Circular economy** – CO₂ associated with demolition and waste management. Re-use and recycling of materials to reduce extraction of new materials.



- The carbon reduction hierarchy to be applied to drainage strategy and design approach. The hierarchy applies to all key lifecycle stages outlined above, not only operation and maintenance. Drainage designs should follow the principles of contributing to a circular economy to maximise sustainability benefits. The top of the hierarchy will have the most impact and drive larger carbon reductions.



- The principles of reducing carbon in design should be applied at each stage of design. This is particularly important at early design stages where major design decisions and/or the development of a carbon strategy have the great potential to reduce the carbon impact of the project as illustrated below:



- Scheme Promoters should baseline and quantifiably reduce Green House Gases (GHGs) from planned movement network developments and their operation
- Scheme Promoters should ensure specific opportunities to reduce GHGs (through the use of LZC technologies) are clearly and traceably communicated to contractors for adoption and validation, prior to the start of on-site works.
- Scheme Promoters and contractors should ensure that GHG reductions forecast at design are validated and/or updated to reflect achievements made.
- HCC Highways shall collate GHG data and information from Scheme Promoters and Scheme Promoters, and – from this evidence base – report successes / lessons learned for the benefit of other HCC departments and the wider supply chain.

Further detail

- Scheme Promoters should use a Carbon Calculator (in accordance with established industry methods e.g. PAS2080 Carbon Management in Infrastructure) to calculate and report a baseline for the GHG impacts of a proposed development.
- Capital GHG impacts¹ should be the de minimis level at which a baseline is undertaken. GHG impacts for materials and construction plant should therefore be incorporated. Where end-of-life GHG impacts can be forecast with certainty, these should also be included in baseline calculations.
- Where information exists to allow a more comprehensive incorporation of lifecycle GHG impacts in a baseline e.g. impacts from traffic during operation or maintenance, this should be agreed in advance with HCC.
- In most cases, a GHG baseline will be undertaken on the preferred option for a development, where the accuracy and comprehensiveness of pre-planning information can be firmly relied upon. In some cases – particularly for major schemes where there is a need to use GHG information as part of the optioneering process – a more detailed GHG baseline(s) may be requested by HCC.
- Once a baseline is complete, reduction opportunities should be identified by consensus and prior to planning submission. Opportunities should be validated by a suitably qualified or experienced GHG delivery partner, who will provide commentary on whether reductions meet or exceed accepted industry practice, as relevant to the scale and nature of a proposed development. The beneficial effects carbon sequestration opportunities should also be explored and articulated as part of the reduction investigation process.
- Scheme Promoters should work with third parties and their supply chains to identify and generate GHG reduction business cases for HCC approval. GHG reduction potential shall be quantified, validated by suitably qualified or experienced GHG delivery partner, and articulated in documents to be submitted as part of the planning application process.
- Construction contractors should review GHG baselines (including any reductions achieved / planned) and identify where deviation from commitments solidified in the planning process are required. Any GHG savings diminished shall be calculated, justified and reported to HCC, for approval prior to implementation.

¹ **Capital GHG impacts** are those associated with the 'capital expenditure' activities on a development, principally, the construction, refurbishment and 'decommissioning/deconstruction/treatment' of an asset or material. Capital GHG impacts include, therefore, embodied impacts i.e. those impacts associated with the extraction, processing and manufacture of materials.

LTP Delivery Plan Stages	1 - Initiation	2 – Option testing	3 - Preferred option 4 – Design 5 - Procurement			6 - Construction	7 - Handover
LTP4 Compliance Gateway	Validation	Master Plan	Outline Planning	Full Planning	Approvals		Lessons Learned
All schemes - all stages	Work with third parties and their value chains to identify and generate GHG reduction business cases for HCC approval						
Major schemes	Establish and articulate site (and site selection) criteria that will facilitate a low carbon transport and transport infrastructure	Undertake a qualitative (or where it is agreed to be of value, quantitative) assessment of carbon (including impact hotspots) impacts associated with proposed transport provision and transport infrastructure by option	(Re-baseline the carbon emissions, if fundamental changes to the proposed transport and transport infrastructure have been instructed) Use a Carbon Calculator in combination with PAS2080 Carbon Management in Infrastructure, to baseline and quantifiably demonstrate reductions in GHGs from planned movement network developments and (where agreed) their operation and maintenance Communicate the detail of and/or performance specification of opportunities that have been committed to and will reduce carbon Incorporate carbon information (low carbon solutions approved, expected % emissions reduction to be achieved) in contractor tenders			Ensure that GHG reductions forecast at design are validated and/or updated to reflect achievements secured Review GHG baselines and identify where deviation from commitments solidified in the planning process are required. Any GHG savings diminished shall be calculated, justified and reported to HCC, for approval prior to implementation	HCC Highways shall collate GHG data and information from Designers and Scheme Promoters, and – from this evidence base – report successes / lessons learned for the benefit of other HCC departments and the wider value chain
Minor schemes (e.g. Integrated Transport Projects where HCC is both the promoter and LPA)	Establish existing or planned future sources of low carbon energy to which the scheme could link	Identify and record specific opportunities and commitments to reduce carbon through, for example, low and zero carbon technologies					
Strategic / local plan developments (outline and full planning applications)	Establish and articulate site (and site selection) criteria that will facilitate a low carbon transport and transport infrastructure						
Smaller developments	No requirements	Undertake a qualitative assessment of carbon (including impact hotspots) impacts associated with proposed transport provision and transport infrastructure by option Identify and record specific opportunities to reduce carbon through, for example, low carbon materials	Record information on carbon credentials of materials and other technologies to be used for the transport and transport infrastructure, and potential savings Where agreed with HCC, use a Carbon Calculator in combination with PAS2080 Carbon Management in Infrastructure to quantify savings achieved			Record information on low carbon construction techniques and processes deployed Where agreed with HCC, a Carbon Calculator in combination with PAS2080 Carbon Management in Infrastructure to quantify savings achieved	

Sustainable Resource Management

Sustainable Hertfordshire Strategy

- Reduce what we throw away.
- Send no avoidable waste to landfill by 2030.
- Increase resource efficiency threefold in the county by 2050.
- Focus on what we are buying to avoid, reduce and reuse what we need to buy and incorporate sustainability criteria into our buying decisions.
- Consider whole life impacts and opportunities in our buying decisions.
- Promote resource efficiency, the waste hierarchy and the delivery of a circular economy.

LTP4

The extraction and disposal of construction materials has a direct relationship to Policy 21, which seeks to minimise and/or mitigate the adverse physical impact on the landscape and environment.

Overarching objective

Demonstrate that sustainable resource management action has been taken to eliminate or practicably reduce waste, to keep materials in high value applications, and (where appropriate) has encouraged the 'sharing' of materials between projects and organisations.



Requirements

- Scheme Promoters shall quantify the material savings achieved (or forecast) through lean and other good engineering measures adopted.
- The volume of construction, demolition and excavation (CDE) arisings to be generated on a scheme shall be forecast during design, and approaches to its management in accordance with the Waste Hierarchy / Proximity Principle, set out.
- Scheme Promoters shall ensure that arisings forecast during design are validated and/or updated to reflect achievements made.
- Scheme Promoters shall work to identify and generate business cases for materials with sustainable features or benefits, for consideration for use (whole lifecycle assessment) on the HCC movement network.
- Scheme Promoters shall – in accordance with specification, and where quality and value for money can be demonstrated – identify and record opportunities to increase durability, flexibility and adaptability of materials, assets and products deployed, especially with regards to reducing maintenance requirements.
- Scheme Promoters should consider resource scarcity as part of a diligent approach to movement network development. This is particularly the case for major works, where the planning authority should be given confidence that sufficient resources are available – certainly regionally and, if not, nationally – for construction and operation.



Further detail

- Scheme Promoters shall quantify the material savings forecast or achieved on a proposed development through the adoption of lean design and ‘designing out waste’ principles. This shall be achieved by (for example) qualifying and quantifying (for example, cubic metres or tonnes saving per £ spent, and/or % by total weight or volume of recycled / secondary material) how the following measures have reduced resource consumption:
 - **Recovery and reuse** – keeping materials at site, or receiving them from other (including minerals) sites, for use in the planned design; balancing cut and fill; using materials with recycled or secondary content.
 - **Off-site construction** – use of prefabricated or pre-cast elements.
 - **Material optimisation** – using less materials and specifying resources that require no modification or cutting at site.
 - **Waste-efficient procurement** – ensuring design intent, specifications and performance requirements are clearly communicated for inclusion in tender procurement documentation for Construction Contractors and the wider supply chain.
- **Deconstruction and flexibility** – considering how materials and assets can be safely and easily adapted, maintained, replaced, deconstructed or demounted throughout their lifetime.
- Subject to safety, quality and durability performance requirements, Scheme Promoters shall work with the wider supply chain to identify and offer to HCC for consideration opportunities to use sustainable, innovative and/or high performing materials (or palettes of materials). A particular focus shall be placed on high volume / impact materials used in highway applications: asphalt, aggregate, concrete and steel. In these circumstances, Scheme Promoters shall clearly demonstrate how whole life value is maximised, and whole life environmental impacts are demonstrably lower than industry norms.
- Where opportunities to use sustainable, innovation and/or high performing materials (may) require a change in specification, this shall be highlighted to HCC for consideration.
- To support the ethos of the Proximity Principle, Scheme Promoters (including their Construction Contractors and their wider supply chain) shall identify what percentage of capital spend on materials and goods originates from in 30 miles of a

proposed development site, and justify this as part of planning submissions in terms of availability, quality and price. The same process will be expected to be completed for any arisings that need to be sent as waste for disposal or incineration with energy recovery.

- Where carbon offsetting for material consumption is viable, opportunities should be selected in accordance with schemes verified by The Gold Standard and The Verified Carbon Standard (Verra).



LTP Delivery Plan Stages	1 - Initiation	2 – Option testing	3 - Preferred option 4 – Design 5 - Procurement			6 - Construction	7 - Handover
LTP4 Compliance Gateway	Validation	Master Plan	Outline Planning	Full Planning	Approvals		Lessons Learned
All schemes	Work with the wider value chain to identify and offer to HCC for consideration opportunities to use sustainable, innovative and/or high performing materials Identify and generate business cases for materials with sustainable features or benefits, for consideration for use (whole lifecycle assessment) on the HCC movement network Identify and record opportunities to increase durability, flexibility and adaptability of materials, assets and products deployed						
Major schemes	Establish and articulate site (and site selection) criteria that will help minimise material consumption and waste production / disposal across the associated transport and transport infrastructure lifecycle	Qualify (and where possible quantify) the potential material savings through lean and other good engineering measures proposed for the transport infrastructure.	<u>Major</u> Give the LPA confidence that sufficient resources are available – certainly regionally and, if not, nationally – for construction and operation <u>Major & Minor</u> Qualify <i>and</i> quantify the material savings achieved (or forecast) through lean and other good engineering measures adopted Forecast the volume of construction, demolition and excavation (CDE) arisings to be generated on a scheme. Approaches to CDE management in accordance with the Waste Hierarchy / Proximity Principle shall be set out Any materials or waste carbon offsetting should be selected in accordance with schemes verified by The Gold Standard and The Verified Carbon Standard.			<i>(Comply with design intent and ensure deviations from plans and commitments are presented to HCC with a summary of the potential impacts and their resolution)</i> Validate and/or update arisings forecast during design to reflect achievements made. Arisings that need to be sent as waste for disposal or incineration with energy recovery, shall be justified in a SWMP and/or MMP, or other suitable report, as agreed with HCC. Identify what percentage of capital spend on materials and goods originates from in 30 miles of a proposed development site; justify this in terms of availability, quality and price.	HCC Highways shall collate materials and waste data and information from Designers and Scheme Promoters, and – from this evidence base – report successes / lessons learned for the benefit of other HCC departments and the wider value chain
Minor schemes <i>(e.g. Integrated Transport Projects where HCC is both the promoter and LPA)</i>							
Strategic / local plan developments <i>(outline and full planning applications)</i>			Qualify (and where possible quantify) the material savings achieved (or forecast) through lean and other good engineering measures adopted Forecast the volume of construction, demolition and excavation (CDE) arisings to be generated on a scheme shall be forecast Approaches to CDE management in accordance with the Waste Hierarchy / Proximity Principle shall be set out				
Smaller developments	No further requirements	Undertake a qualitative assessment of key material and waste impacts Identify and record specific opportunities to reduce material consumption and waste generation	Record information on sustainability credentials of materials and other technologies used, and potential savings			Record information on low construction techniques and processes deployed have minimised material consumption, and waste generation and disposal	

Climate Adaptation and Resilience

Sustainable Hertfordshire Strategy

- Ensure that climate resilience measures are incorporated into planning applications.
- Ensure schemes do not 'lock in' climate vulnerabilities.
- Work with relevant transport operators to ensure transport infrastructure is resilient to climate change - determining the most critical infrastructure, and the adequacy of existing facilities essential for maintaining a supply of goods and services to our businesses.
- Implement the climate change risk assessment to identify, plan and invest in services so they are ready for future climates.
- Promote the uptake of Sustainable Drainage Systems (SuDS) on new developments and infrastructure projects.

LTP4

LTP4 Policy 14 sets out the requirement that HCC will design, construct, maintain and operate all infrastructure in the light of the risk from a changing climate.

Overarching objective

Understand the predicted climatic changes in the Hertfordshire region, to ensure developments can effectively respond to risks and opportunities.



Requirements

- Scheme Promoters should acquire climate data (for example, as extracted from the Met Office UKCP database, at a 25 square km resolution) for the Hertfordshire region, for the predicted lifetime of a proposed development.
- Scheme Promoters should identify the impacts from projected changes to precipitation and temperature (both seasonal average and extremes), wind, lightning, and soil conditions, and demonstrate that appropriate mitigation is incorporated (or justification provided, where not).
- Scheme Promoters should demonstrate how a Climate Change Adaptation and Resilience Report risk assessment has been undertaken and the findings have informed the location, scale and specifications on the movement network.
- Scheme Promoters should identify and put in place proportionate measures to manage systemic (interdependent) climate risks on all major works (or where there is agreed to be clear justification on projects comprising minor works).
- Scheme Promoters should take into account climate resilience requirements (as identified during design development) as part of Asset Management Plans developed.
- Scheme Promoters shall, in conjunction with drainage engineers, prioritise flood management solutions at the top of the drainage hierarchy (1) infiltration; (2) to a surface water body; (3) to a surface water sewer or drainage system; and (4) to a combined sewer. Sustainable and Nature Based solutions (NBS) shall be prioritised, and designed in collaboration with ecological expertise.



Further detail

- Proposed developments must be adaptable and resilient to future climatic conditions. The potential financial costs of not doing so, are significant.
- Scheme Promoters should work to demonstrate how movement network assets and systems have responded to identified climate trends as found to be relevant to the proposed development.
- Specific examples of approaches to climate adaptation shall be cited in planning application documentation to demonstrate how designs have responded to, or mitigations have been put in place for, climate forecasts for:
 - precipitation;
 - temperature (both seasonal average and extremes);
 - wind;
 - lightning; &
 - soil conditions.
- Scheme Promoters are encouraged to find NBS to design (Sustainable Drainage Systems (SuDS) and use of trees to reduce urban heat island effects, being prime examples).

Where NBS are to be used, an Asset Management Plan (to support operation and maintenance activities) shall be developed and linked to the requirements of any Ecological and/or Landscape Management Plan produced.

- In some cases – particularly for major schemes – a consideration of systemic / interdependent relationships between movement networks and other infrastructure and systems may be requested by HCC. In these cases, Scheme Promoters shall be responsible for engaging with organisations and providers of key services that use, or are dependent on, a movement network, and how failure in one element of the system in response to one or more climate trend can be eliminated or mitigated.

LTP Delivery Plan Stages	1 - Initiation	2 – Option testing	3 - Preferred option 4 – Design 5 - Procurement			6 - Construction	7 - Handover
LTP4 Compliance Gateway	Validation	Master Plan	Outline Planning	Full Planning	Approvals		Lessons Learned
All schemes	None						
Major schemes	HCC shall acquire and provide climate data (for example, as extracted from the Met Office UKCP18 database,at a 25 square km resolution) for the Hertfordshire region, for the predicted lifetime of a proposed development	Identify the vulnerability of schemes (and component elements, therein) to projected changes in climate, and demonstrate that appropriate adaptation is incorporated Prioritise flood management solutions at the top of the drainage hierarchy	<u>Major</u> Identify and put in place proportionate measures to manage systemic (interdependent) climate risks on all major works (or where there is agreed to be clear justification on projects comprising minor works) <u>Major & Minor</u> Complete a climate change risk assessment on the highways and transport elements of a development. Prepare a Climate Change Adaptation and Resilience Report to show how the location, scale and specifications of a development on the movement network, have been designed cognisant of climate change. Prioritise flood management solutions at the top of the drainage hierarchy			<i>(Comply with design intent and ensure deviations from plans and commitments are presented to HCC with a summary of the potential impacts and their resolution)</i> Take into account climate resilience requirements (as identified during design development) as part of Asset Management Plans developed. Ensure Asset Management Plans incorporate requirements for NBSs, and are linked to the requirements of any Ecological and/or Landscape Management Plan produced.	HCC Highways shall collate examples of adaptation to climate change from Designers and Scheme Promoters, and – from this evidence base – report successes / lessons learned for the benefit of other HCC departments and the wider value chain
Minor schemes <i>(e.g. Integrated Transport Projects where HCC is both the promoter and LPA)</i>							
Strategic / local plan developments <i>(outline and full planning applications)</i>			Prepare a Climate Change Adaptation and Resilience Report risk assessment and show how the findings have informed the location, scale and specifications on the movement network Prioritise flood management solutions at the top of the drainage hierarchy				
Smaller developments	No requirements	No requirements	Prioritise flood management solutions at the top of the drainage hierarchy			<i>(Comply with design intent and ensure deviations from plans and commitments are presented to HCC with a summary of the potential impacts and their resolution)</i>	

Biodiversity

Sustainable Hertfordshire Strategy

- Enhance nature across our land and water by 20% by 2030.
- Identify and deliver opportunities to create and enhance habitat on the highway estate.
- Using the Hertfordshire Biodiversity Baseline, establish a nature baseline for the Highways estate.
- Enhance nature across Hertfordshire's land and water by 20% by 2050.
- Ensure delivery of Biodiversity net Gain based on the DEFRA metric (10% as a minimum).

LTP4

To preserve the character and quality of Hertfordshire's environment, biodiversity (including Key Biodiversity Areas, KBA), and rivers and waterways need to be protected from the impacts of transport in accordance with Policy 21.

Overarching objective

In accordance with the Hertfordshire Pollinator Strategy, the overarching objective for movement network planning applications is to demonstrably contribute to a 20% increase in green and blue habitats and spaces, across Hertfordshire, by 2030



Requirements

- Achievement of biodiversity net gain on all major works (or where there is agreed to be clear justification on projects comprising minor works).
- Scheme Promoters shall ensure that Ecological and/or Landscape Management Plans are produced for all major works (or where there is agreed to be clear justification on projects comprising minor works).
- Scheme Promoters should engage with HCC, large scale tree planting and other established biodiversity schemes, to identify opportunities to integrate habitat and wildlife corridors across the county.



Further detail

- Proposed movement network developments shall achieve Biodiversity Net Gain.
- Scheme Promoters shall calculate the (baseline) value of biodiversity in the pre-development red line boundary, using [Defra's Biodiversity Metric](#). Scheme Promoters shall also use pre-planning and landscaping proposals to forecast the expected biodiversity value of the operational phase, including any off-site planting planned as part of offsetting.
- Where planting and habitats are to be incorporated into plans for a movement network, Scheme Promoters shall use an appropriate mix of native and non-native species that is able to respond to future climatic conditions. A long-term Ecological and/or Landscape Management Plan shall be developed to accompany developing designs, to ensure responsibilities for maintaining habitats across the network are clear, understood and agreed.
- Scheme Promoters shall engage with HCC, large scale tree planting and other established biodiversity schemes to demonstrate how new or modified habitats integrate in the wider context of other local green spaces (both in Hertfordshire and beyond), creating connections and corridors, as appropriate.

The role of these schemes in carbon sequestration shall be set out in planning documents.

- Scheme Promoters shall be responsible for communicating the baseline and forecast operational values for biodiversity (alongside any supporting information and management plans) as part of planning submissions to the local planning authority.
- All relevant Sites of Special Scientific Interest (SSSIs), European sites (Special Areas of Conservation and Special Protection Areas) and Ramsar sites¹ shall be clearly identified in the context of proposed development allocations and strategic policies for development. Designated sites should be protected and, where possible, enhanced. Opportunities to buffer and expand these sites using tools such as the emerging Local Nature Recovery Strategy and Biodiversity net gain should also be explored.
- Scheme Promoters should also support the protection, maintenance and enhancement of local wildlife sites and priority habitats, recognising the value of non-statutorily designated sites in strengthening the nature recovery network at a local scale.



Biodiversity							CHAPTER 3
LTP Delivery Plan Stages	1 - Initiation	2 – Option testing	3 - Preferred option 4 – Design 5 - Procurement			6 - Construction	7 - Handover
LTP4 Compliance Gateway	Validation	Master Plan	Outline Planning	Full Planning	Approvals	LTP4 Compliance Gateway	Lessons Learned
All schemes	Use an appropriate mix of native and non-native species that is able to respond to future climatic conditions						
Major schemes	Work with ecological expertise to establish spatial and early planning ideas for achievement of biodiversity net gain on all major, minor and strategic highways and transport works. Engage with HCC, large scale tree planting and other established biodiversity schemes, to identify opportunities to contribute to conservation priorities both on and off-site by creating habitat and creating/ strengthening wildlife corridors. The role of these schemes in carbon sequestration shall be set out.		Work with ecological expertise to embed the mitigation hierarchy into the design process and achieve Biodiversity Net Gain. Calculate the (baseline) value of biodiversity in the footprint of the proposed highway and transport infrastructure, using the latest version of Defra’s Biodiversity Metric. Use pre-planning and landscaping proposals to forecast the expected biodiversity value in the proposed highway and transport, including any off-highway planting planned as part of offsetting. Ensure that Ecological and/or Landscape Management and monitoring Plans are produced for all major works (or where there is agreed to be clear justification on projects comprising minor works).			<i>Comply with design intent and ensure deviations from plans and commitments are presented to HCC with a summary of the potential impacts and their resolution Design changes will be informed by updated assessments of biodiversity impacts and outcomes. On completion of the scheme an ‘as-built’ biodiversity assessment will be undertaken alongside a final management and monitoring plan</i>	HCC Highways shall collate examples of action on biodiversity from Designers and Scheme Promoters, and – from this evidence base – report successes / lessons learned for the benefit of other HCC departments and the wider value chain.
Minor schemes (e.g. Integrated Transport Projects where HCC is both the promoter and LPA)							
Strategic / local plan developments (outline and full planning applications)							
Smaller developments	Consider and present opportunities for preserving and enhancing vegetation and wildlife corridors, through planting schemes		Confirm to HCC design commitments to preserve and enhance vegetation and wildlife corridors, through planting schemes				

Air Quality

Sustainable Hertfordshire Strategy

- Cleaner air for all by 2030.
- Promoting walking and cycling over car travel with our Highways teams.
- Promoting the uptake of low emission vehicles and charging infrastructure.
- Enable behaviour change in our population to promote cleaner air, and reduce population exposure to pollution.
- Promote and create Healthy Places through all we do.
- Prioritise locations for healthy highways interventions.

LTP4

In accordance with the Hertfordshire's Air Quality Strategy, LTP4 Policy 19 commits to reducing levels of harmful atmospheric emissions by promoting a change in peoples' travel behaviour to encourage a modal shift in journeys from cars to walking, cycling and passenger transport. Resolving barriers to, and supporting the uptake of Ultra-low Emission Vehicles (ULEV) in Hertfordshire, will be encouraged as part of this approach.

Overarching objective

In accordance with the Hertfordshire Air Quality Strategy, the overarching objective for movement network planning applications is to deliver movement networks that incentivise the use of public transport, alongside the provision of infrastructure and systems that encourage the use of low emission vehicles across Hertfordshire.



Requirements

- Scheme Promoters shall demonstrate how a development will drive an uptake in the availability of public transportation (and non-motorised movement), and hence reduce reliance on cars, thereby reducing congestion across Hertfordshire.
- Scheme Promoters shall demonstrate how a development will provide infrastructure and operational management regimen that support the use of low emission vehicles. Funding options for low emissions infrastructure should be reviewed as part of all new developments with all major works (or where there is agreed to be clear justification on projects comprising minor works).



Further detail

- Scheme Promoters shall be responsible for identifying how the location of planned movement network developments has (in the first instance) been sited away from vulnerable receptors and users, particularly schools, nurseries and care homes.
- Scheme Promoters shall be responsible for establishing whether Clean Air Zones in strategic movement network boundaries are feasible, and what actions are required to make this a reality.
- Movement network designs shall take full consideration of the safety inherent to, and ease with which, non-motorised travel options can be accessed and used. Scheme Promoters will be responsible for demonstrating that impacts from a movement network (particularly on Air Quality Management Areas, AQMA) are not worsened and – where possible – improved. This shall be achieved through proportionate air quality modelling.
- Scheme Promoters shall be responsible for engaging frequently with HCC Network Management teams to establish how movement networks will maximise the potential for free flowing traffic in the region.

- Where parking facilities are to be provided as part of a movement network development, Scheme Promoters shall specify (in accordance with best practice) charging facilities for low emission vehicles. Where agreed with HCC, a future mobility study may be conducted to validate assertions on the number and type of charging infrastructure to be incorporated.
- For major movement networks that require new transport services, HCC will set out the specification of vehicles to be used, such that Scheme Promoters are able to respond effectively in terms of layout and charging infrastructure. In this context, Scheme Promoters should expect that new vehicle fleet specifications will be best in class in terms of emissions (ultra-low and zero), and plan accordingly.



LTP Delivery Plan Stages	1 - Initiation	2 – Option testing	3 - Preferred option 4 – Design 5 - Procurement			6 - Construction	7 - Handover
LTP4 Compliance Gateway	Validation	Master Plan	Outline Planning	Full Planning	Approvals		Lessons Learned
All schemes	Movement network designs shall take full consideration of the safety inherent to, and ease with which, non-motorised travel options can be accessed and used (Excluding smaller developments) Engage frequently with HCC Network Management teams to establish how movement networks will maximise the potential for free flowing traffic in the area						
Major schemes	Establish whether the instigation of Clean Air Zones in strategic movement network boundaries is feasible, and what actions are required to make this a reality	For major movement networks that require new transport services, HCC will set out the specification of vehicles to be used, such that Scheme Promoters are able to respond effectively in terms of layout and charging infrastructure. In this context, Designers and Scheme Promoters should expect that new vehicle fleet specifications will be best in class in terms of emissions (ultra-low and zero), and plan accordingly	Demonstrating that impacts from a movement network (particularly on Air Quality Management Areas, AQMA) are not worsened and – where possible – improved. This shall be achieved through proportionate air quality modelling	Funding options for low emissions infrastructure should be reviewed as part of all new developments with all major works and (where agreed with HCC) new minor schemes.	Comply with design intent and ensure deviations from plans and commitments are presented to HCC with a summary of the potential impacts and their resolution)	HCC Highways shall collate examples of action on air quality from Designers and Scheme Promoters, and – from this evidence base – report successes / lessons learned for the benefit of other HCC departments and the wider value chain.	
Minor schemes (e.g. Integrated Transport Projects where HCC is both the promoter and LPA)	Identify how the location of planned movement network developments has (in the first instance) been sited away from receptors and users vulnerable to air quality impacts, particularly schools, nurseries and care homes Demonstrate how the scheme will drive an uptake in sustainable travel Identify how the location of planned movement network developments has (in the first instance) been sited away from receptors and users vulnerable to air quality impacts, particularly schools, nurseries and care homes Demonstrate how the scheme will drive an uptake in sustainable travel		Demonstrate how a development will provide infrastructure and operational management regimen that support the use of low emission vehicles Where parking facilities are to be provided as part of a movement network development, Designers shall specify (in accordance with best practice) charging facilities for low emission vehicles				
Strategic / local plan developments (outline and full planning applications)	Identify how the location of planned movement network developments has (in the first instance) been sited away from receptors and users vulnerable to air quality impacts, particularly schools, nurseries and care homes Demonstrate how the scheme will drive an uptake in sustainable travel		Where agreed with HCC, a future mobility study may be conducted to validate assertions on the number and type of charging infrastructure to be incorporated	No requirements			
Smaller developments	No requirements						

Historic Environment

Sustainable Hertfordshire Strategy

- No direct commitment.

LTP4

LTP4 states that the built and historic environment (including designated and undesignated heritage assets, listed and historic buildings, and ancient roads) should be protected from transport impacts.

In particular, Policy 21 necessitates that the impacts of traffic and transport infrastructure on the natural, built and historic environment be minimised.

Overarching objective

To protect, preserve and enhance the understanding and enjoyment of both the tangible and intangible aspects of Hertfordshire's heritage and archaeology.



Requirements

- Scheme Promoters should collaborate with historic environment specialists to identify and respond fully to planning requirements relating to heritage and archaeology.
- Scheme Promoters should articulate / signpost in planning documentation the approach and measures adopted (or proposed) for delivering movement network developments in a way that proportionately and effectively responds to both tangible and intangible features of the historic environment.



Further detail

- Scheme Promoters should prioritise the preservation and celebration of assets of historic value, either as part of a planned development (in-situ) or elsewhere in the county. Where this is agreed (with historic environment specialists) not to be practical, a suitable regimen of surveillance, monitoring and recording shall be conducted.
- Scheme Promoters shall work to ensure that planned movement network designs not only reflect the needs and character of the local environment, but actively bring out local aspects of heritage and archaeological interest. The use of carefully considered artwork, sculpture and other installations, descriptive signage and messages, material palettes and colour, shall be central to approaches adopted.
- Scheme Promoters shall be responsible for communicating sensitive and best practice approaches to celebrating historic assets in the urbanised and natural environment, as part of planning submissions to the local planning authority.

LTP Delivery Plan Stages	1 - Initiation	2 – Option testing	3 - Preferred option 4 – Design 5 - Procurement			6 - Construction	7 - Handover
LTP4 Compliance Gateway	Validation	Master Plan	Outline Planning	Full Planning	Approvals		Lessons Learned
All schemes	Collaborate with historic environment specialists to minimise harm to the historic environment and maximise opportunities for enhancing the significance of heritage assets. Engage with historic environment specialists at the earliest opportunity to ensure that the project design team is fully informed of the risks and opportunities.						
	Collaborate with an historic environment specialist regarding the setting of heritage assets, as well as identifying listed building curtilage structures.						
	De-risk impacts on potential buried heritage assets through a staged programme of preliminary site-based surveys. Seek advice regarding the timing for such work in relation to the planning application and/or pre-construction requirements to ensure that there are no delays. The results of the preliminary site-based survey will enable the Planning Archaeologist to formulate an appropriate mitigation strategy. This might be preservation in situ for the most significant remains (e.g. through avoidance and re-design), where this is feasible and warranted, or archaeological excavation and recording / strip map and sample, and/or a watching brief (monitoring) for remains of lesser significance.						
	Communicate sensitive and best practice approaches to celebrating historic assets in the urbanised and natural environment						
Major schemes	Demonstrate how collaboration with historic environment specialists to promote active travel has been achieved and the feasibility of a proposed development with respect to cultural heritage has been documented.	Demonstrate how collaboration with historic environment specialists has been achieved to help ensure that informed decisions are made in respect of risk, constraints and opportunities. Document how historic environment information has been used to help select the preferred highways and transport option.	Demonstrate how collaboration with historic environment specialists has been achieved at both preferred option and detailed design stage.	Set out in planning documentation the measures that have been adopted to minimise risk and maximise opportunities in the design.	Establish the need for and timing of any site-based investigation, whether this is required pre-planning or pre-construction, and demonstrate that sufficient time has been incorporated into the planning and/or construction programme respectively.	Demonstrate how design and planning commitments have been met, and ensure any deviations from this intent are presented to HCC with a summary of the potential impacts and their resolution.	HCC Highways shall collate examples of action on the historic environment from Designers and Scheme Promoters, and – from this evidence base – report successes / lessons learned for the benefit of other HCC departments and the wider value chain.
Minor schemes <i>(e.g. Integrated Transport Projects where HCC is both the promoter and LPA)</i>			Carry out work in accordance with the historic environment requirements of an approved Construction Environment Management Plan.				
Strategic / local plan developments <i>(outline and full planning applications)</i>			Determine whether a separate Historic Environment Management Plan is necessary, and – if so – deliver the document in accordance with advice from an historic environment specialist.				
Smaller developments	Clarify whether any proposed transport infrastructure will be in a conservation area or affected by the listed status of local properties or remains.	No requirement					

Noise and Vibration

Sustainable Hertfordshire Strategy

- No direct commitment.

LTP4

Through its Speed Management Strategy, HCC will seek to manage the network to achieve appropriate speeds in the interests of safety, other road users, and the environment.

Policy 21 commits to minimising noise issues arising from transport, by working with key partners and stakeholders and through use of appropriate materials.

Overarching objective

To minimise adverse effects from noise and vibration on human and other receptors, including movement network users, whilst encouraging positive sound associations.



Requirements

- Scheme Promoters should be responsible for collaborating with acoustic specialists to identify and fully respond to planning requirements relating to noise and vibration.
- In selecting any physical mitigation measures (particularly sound insulation or barriers), Scheme Promoters should demonstrate how the aesthetics (in a local context), and maintenance and future reuse (at end of life), of these assets has been considered.
- Where it is possible to incorporate positive sound associations in a planned movement network design, this should be achieved and articulated.

Further detail

- Scheme Promoters should liaise with acoustic specialists to ensure proportionate modelling of a planned movement network scheme is undertaken, and mitigation of any identified impacts agreed and incorporated in plans.
- Scheme Promoters should minimise impacts of noise and vibration on local communities and the natural environment through the careful specification of low-noise highway materials and surface treatments e.g. longitudinal grooving, in combination with planned mitigation measures. Any novel approaches and treatments to be used to minimise noise impacts shall benefit from clear provenance and prior testing, unless agreed with HCC.
- Scheme Promoters should be responsible for specifying and using best-in-class sound insulation for site plant, and using modern methods of logistics and site practice to minimise noise and vibration impacts on local receptors.
- Where electric and other zero and low emission vehicles are to be specified as part of the HCC vehicle fleet, any forecast benefit in terms of operation noise should be reported.

- The use of positive sound associations to offset untoward noise should be considered, particularly where planting and water features are part of a planned design.
- The qualification and quantification of approaches to minimise noise and vibration impacts, and the use of positive sound associations, shall be articulated and communicated as part of planning applications.



LTP Delivery Plan Stages	1 - Initiation	2 – Option testing	3 - Preferred option 4 – Design 5 - Procurement			6 - Construction	7 - Handover
LTP4 Compliance Gateway	Validation	Master Plan	Outline Planning	Full Planning	Approvals		Lessons Learned
All schemes	Collaborate with acoustic specialists to identify and fully respond to planning requirements relating to noise and vibration						
Major schemes	Identify how the location of planned movement network developments has (in the first instance) been sited away from noise and vibration sensitive receptors and users, particularly schools, nurseries and care homes. Consider whether mitigation for any significant adverse effects is likely to be feasible.		<u>Major & Minor</u> Select physical mitigation measures (particularly sound insulation, noise barriers, earth bunding or low noise road surfacing), on the basis of whole life cost, aesthetics (in a local context), and maintenance and future reuse (at end of life). Incorporate positive sound associations in a planned movement network design, this shall be achieved and articulated Where electric and other zero and low emission vehicles are to be specified as part of the HCC fleet, any forecast benefit in terms of operation noise shall be reported <u>Major, Minor & Strategic</u> Minimise impacts of noise and vibration on local communities and the natural environment through the careful specification of low-noise highway materials and surface treatments			Specify and use best-in-class sound insulation for site plant, and using modern methods of logistics and site practice to minimise noise and vibration impacts on local receptors	HCC Highways shall collate examples of action on the historic environment from Designers and Scheme Promoters, and – from this evidence base – report successes / lessons learned for the benefit of other HCC departments and the wider value chain
Minor schemes <i>(e.g. Integrated Transport Projects where HCC is both the promoter and LPA)</i>	Identify how the location of planned movement network developments has (in the first instance) been sited away from noise and vibration sensitive receptors and users, particularly schools, nurseries and care homes					Optimise the volume and type of material used for acoustic screening, to minimise resource consumption and requirements for future maintenance.	
Strategic / local plan developments <i>(outline and full planning applications)</i>						<i>(Comply with design and planning commitments, and ensure any deviations from this intent are presented to HCC with a summary of the potential impacts and their resolution)</i>	
Smaller developments	No requirements, unless significant adverse environmental effects have been identified. Where this is the case, demonstrate how mitigation measures have been agreed with an acoustic specialist						

Health and Wellbeing

Sustainable Hertfordshire Strategy

- No direct commitment.

LTP4

The LTP4 vision is to improve quality of life, create vibrant and healthy communities, and provide active and inclusive transport opportunities.

Core Objective 8 of LTP4 commits to making journeys and their impact safer and healthier, by driving a modal shift that encourages active travel.

Overarching objective

To promote health and wellbeing, including the provision of movement network developments that make provision for active travel options (as well as greater physical activity) across Hertfordshire.



Requirements

- Scheme Promoters shall demonstrate how a development provides new, and/or ties into existing, infrastructure that accommodates cycling, walking and other modes of more active travel.
- Scheme Promoters shall demonstrate how the specification of hazardous materials required for the construction of a development will be practically minimised.
- Scheme Promoters shall demonstrate how health and well-being (in conjunction with requirements for Air Quality and Future Ready) has been taken into account in the development of plans for a movement network. Areas of focus in this context shall include: enhancing opportunities for active travel; catering for the needs of children and people of limited mobility and visual impairment; the use of active and passive safety design features; providing public spaces for contemplation and social engagement (reducing loneliness) and, increasing enjoyment of, and access to, the countryside.

Further detail

- In some cases developers and scheme promoters will be required to work with HCC who will conduct a Healthy Streets Design Check assessment on the site at the pre planning stage. The assessment will score how streets are performing in line with achieving basic human needs and should help inform human centred good design. If this is required, it will be raised by the HCC officer at pre planning stage.
- Safety and ease of access/use shall be the primary considerations for designing active travel movement networks. Shielding pedestrian, cyclist and equestrian users from air pollution, noise and adverse visual impacts, whilst providing natural, engaging and aesthetic environments, will be core components of this approach.
- Scheme Promoters will utilise the information provided by the Healthy Streets tools to further support the articulation of planning ambition and to ensure developments delivered are 'good for people'.

LTP Delivery Plan Stages	1 - Initiation	2 – Option testing	3 - Preferred option 4 – Design 5 - Procurement			6 - Construction	7 - Handover
LTP4 Compliance Gateway	Validation	Master Plan	Outline Planning	Full Planning	Approvals		Lessons Learned
All schemes	Demonstrate how the specification of hazardous materials required for the construction of a development will be practically minimised						
Major schemes	Demonstrate how a development provides new, and/or ties into existing, infrastructure that accommodates cycling, walking and other modes of more active travel	Safety and ease of access/use shall be the primary considerations for designing active travel movement networks	Demonstrate specific enhancement measures for: • active travel • catering for the needs of children and people of limited mobility and visual impairment • the use of active and passive safety design features • providing public spaces for contemplation and social engagement (reducing loneliness), • increasing enjoyment of, and access to, the countryside. In some cases developers and scheme promoters will be required to work with HCC who will conduct a Healthy Streets Design Check assessment on the site at the pre planning stage. The assessment will score how streets are performing in line with achieving basic human needs and should help inform human centred good design. If this is required, it will be raised by the HCC officer at pre planning stage			(Comply with design and planning commitments, and ensure any deviations from this intent are presented to HCC with a summary of the potential impacts and their resolution)	HCC Highways shall collate examples of action on the historic environment from Designers and Scheme Promoters, and – from this evidence base – report successes / lessons learned for the benefit of other HCC departments and the wider value chain
Minor schemes <i>(e.g. Integrated Transport Projects where HCC is both the promoter and LPA)</i>							
Strategic / local plan developments <i>(outline and full planning applications)</i>							
Smaller developments	No further requirements		No further requirements			No further requirements	

Future Ready

Sustainable Hertfordshire Strategy

- All operations and services ready for future climates (extreme weather events).
- Determining the most critical infrastructure, and the adequacy of existing facilities; essential for maintaining a supply of goods and services to our businesses.
- Ensure that climate resilience measures are incorporated into planning applications.
- Ensure schemes do not 'lock in' climate vulnerabilities.
- Work with relevant transport operators to ensure transport infrastructure is resilient to climate change - determining the most critical infrastructure, and the adequacy of existing facilities essential for maintaining a supply of goods and services to our businesses.
- Implement the climate change risk assessment to identify, plan and invest in services so they are ready for future climates.
- Promote the uptake of Sustainable Drainage Systems (SuDS) on new developments and infrastructure projects.

LTP4

LTP4 notes that the scale of technological change could be substantial in future years, and it is vital that transport planning not only embraces the potential but can adapt to new norms of mobility. Equally, any approaches adopted must be delivered cost effectively, mindful of future maintenance costs and liabilities.

As the LTP4 must be informed and adaptable to be more responsive to future change, so must the movement networks that align with it.

Overarching objective

Ensure that built environment trends for the next 30 years as relevant to Hertfordshire are understood, and responded to in the design and development process.



Requirements

- Scheme Promoters shall, as part of optioneering processes, record the potential for current and future transit-led developments, and capture how the preferred solution takes this into account.
- Scheme Promoters shall demonstrate how flexibility has been incorporated into a design, to accommodate future links, assets or technologies to the scheme, and to support the ability of users to 'work from everywhere'.
- Scheme Promoters shall describe in their planning submissions any other method or process (not previously described) that responds to future technological (including digital), societal, resource and climate-based trends.

Further detail

- Scheme Promoters shall set out in planning documentation, how a development has assessed and is managing the risks and opportunities associated with transport related to the following topics.
 - **Technology** e.g. use of low impact / high efficiency / digital tools, plant and equipment; integration of 'big data' approaches to information management such as real-time monitoring; use of sensors to help monitor mode usage.
 - **Society** e.g. taking into account future demographics, trends and changes to the way communities work and operate – this might, for example, include the reimagining of high streets to better accommodate autonomous vehicles.
 - **Resources** e.g. use of recovered or renewable materials, and approaches that eliminate waste generation across a movement network lifecycle.
 - **Climate** e.g. use of low and zero carbon technologies; responding to future climate conditions as relevant to the Hertfordshire region.

- Scheme Promoters shall incorporate flexibility and durability (as balanced with whole life costs and quality) in their planning proposals. For example, this could relate to aspects of a design that:
 - Facilitate connection to future developments or movement networks (reducing the number of disruptive local activities over time);
 - Accommodate future technology and assets (provision of passive utilities infrastructure / space that can house future electric vehicle charging or data technology);
 - Take into account and respond to emerging opportunities (adapting designs so they can accommodate the forthcoming use of electric scooters); and/or
 - Can be easily demounted or deconstructed for easy maintenance, refurbishment, replacement and end-of-life management
- When producing planning applications for strategic movement networks, Scheme Promoters shall work with HCC to identify how a scheme can best contribute to the current and/or future plans for development i.e. take a proactive approach to 'transit-led development' and 'internalisation'. As part of this approach, HCC shall work with Scheme Promoters to ensure adequate space provision and use of (for example) mobility hubs to facilitate strategic outcomes.



LTP Delivery Plan Stages	1 - Initiation	2 – Option testing	3 - Preferred option 4 – Design 5 - Procurement			6 - Construction	7 - Handover
LTP4 Compliance Gateway	Validation	Master Plan	Outline Planning	Full Planning	Approvals		Lessons Learned
All schemes	Describe in their planning submissions any other method or process (not previously described) that responds to future technological (including digital), societal, resource and climate-based trends						
Major schemes	Record the potential for current and future transit-led development / internalisation and capture how a preferred solution takes this into account		Demonstrate how flexibility has been incorporated into a design, to accommodate future links, assets or technologies to the scheme, and to support the ability of users to ‘work from everywhere’			<i>(Comply with design and planning commitments, and ensure any deviations from this intent are presented to HCC with a summary of the potential impacts and their resolution)</i>	HCC Highways shall collate examples of action on the historic environment from Designers and Scheme Promoters, and – from this evidence base – report successes / lessons learned for the benefit of other HCC departments and the wider value chain
Minor schemes <i>(e.g. Integrated Transport Projects where HCC is both the promoter and LPA)</i>							
Strategic / local plan developments <i>(outline and full planning applications)</i>							
Smaller developments	No further requirements		No further requirements				

Document title	Relevant themes covered		
	Environmental sustainability	Health and wellbeing	Future Ready
Accessibility Strategy	Any increase in numbers of people opting to travel by public transport and other more sustainable modes (i.e. walking and cycling) as opposed to the private car, will bring environmental and health benefits both at the individual and community level.	LTP4 Policy 1: Transport User Hierarchy - opportunities to reduce travel demand and the need for travel - Vulnerable road user needs (pedestrians and cyclists) - Passenger transport user needs - Powered two wheeler (mopeds/motorbikes) user needs - Other motor vehicle user needs Represents a shift in emphasis with the aim of increasing rates of travel by more sustainable modes. LTP4 Policy 6: Accessibility County council will seek to increase the ease with which people, particularly disadvantaged groups, can access key services. - working in partnership with key stakeholders e.g. bus and rail operators, community transport operators, voluntary sector and public service providers. - Supporting transport services - Addressing barriers to accessibility - Promoting travel options, information, and choices	
Active Travel Strategy	Policy objectives: Reducing carbon emissions 1. Ensure Active Travel contributes fully to addressing environmental challenges in Hertfordshire - improving air quality - Reducing growth in carbon emissions from transport sector - Improving natural and built environment in Herts	Policy objectives: 3. Improving public health - Increase physical activity levels to help prevent and manage a number of health conditions. - Levels of road casualties should not increase 4. Improving quality of life - Increase level of community cohesion through Active Travel - Improve community safety - Improve equality of opportunity for Herts residents - Improve physical access to education by Active Travel	Policy Objectives: 2. Ensure Active travel contributes fully to enhancing economic growth - Reducing economic costs associated with transport, through reducing congestion, increasing productivity - Reducing costs associated with lack of exercise, including employee absenteeism and NHS costs - Improve accessibility to labour market and reducing unemployment through increased availability of public transport options. - Improving desirability of facilities and services through the enhanced transport facilities and pedestrian environments.
Air Quality Strategy	Aim: To achieve an improvement in Hertfordshire’s air quality through the work we do. As a part of HCC’s Corporate Plan: Opportunity to Thrive: promoting the use of green space in Hertfordshire and encouraging the use of public transport, thus becoming a cleaner and healthier county.	As a part of HCC’s Corporate Plan: Opportunity to be healthy and safe - reduce the levels of pollutants that we all breathe, particularly when in cars and travelling. Reducing the number of people that go on to develop diseases such as lung cancer and cardiovascular complications.	As a part of HCC’s Corporate Plan: Opportunity to Prosper: Promote a more efficient transport network, encouraging reduced congestion and reliable public transport. Both of which are essential for economic growth. Opportunity to take part: Engaging Schools, local businesses and other partners in schemes and initiatives which will make Herts air cleaner.

Document title	Relevant themes covered		
	Environmental sustainability	Health and wellbeing	Future Ready
Energy Strategy	- Reduce carbon emissions by 50% from 2012/13 baseline (by 2025) with a long term ambition of achieving a net zero position - Purchase energy from renewable resources - Reduce energy consumption to good practice benchmark for all of the HCC portfolio - Deliver renewable energy investment projects (Future Ready) - Potential to reduce emissions by over 80% from the built environment by 2025 - Planting trees and developing meadows to offset carbon emissions - Develop infrastructure such as EV Charging, heat networks (not relevant for highways), and Transport related initiatives, supporting communities and improved use of regional assets to help reduce carbon emissions.		- Infrastructure development and community projects delivery - improve resilience through distributed energy generation
Green Infrastructure Strategy	Biodiversity: Need to create connectivity between Key Biodiversity Areas fringing major settlements and locally designated wildlife sites. Key opportunities include: Promotion of community forestry, expressing the aspirations of the WCCF Plan, general woodland expansion. wetland and heathland expansion Flood attenuation: Allowing space for water in urban areas, additional flood storage could increase biodiversity Future development close to rivers might exacerbate existing pressures, so ID areas of wetland enhancement and expansion will help.	To improve healthiness of the environment existing large scale tree planting initiatives such as the Trees Against Pollution (TAP) could be adopted to cover many of the main road and rail corridors in the County. These would provide an attenuation function in relation to air quality and particulate filtration (2.28). GI for people - the importance of provision for low key and informal recreation to enhance the value of existing green infrastructure, and creating/promoting an improved series of links between settlements, commons and the wider countryside. The importance of the green infrastructure network for health and quality of life, seeking to promote awareness and appreciation of the network;	Any future growth and redevelopment should plan for street tree planting as an integral part of the masterplan to ensure climate change adaptation, seeking to apply the TCPA standard. Conserve and enhance: The varied landscapes of the county – farmland, ancient woodland, wooded valley crests, heathlands and commons and the intricate network of river valleys; • The functionality of the riverine environments, in terms of landscape character, ecology and flows, as well as manmade water elements of strategic importance such as the Grand Union Canal and the Wilstone Reservoir; • The strong sense of place created by aspects of historic legacy, such as Roman and medieval settlement, as well as historic parklands and estates such as Ashridge, Hatfield and the network of parklands in south Hertfordshire.

Document title	Relevant themes covered		
	Environmental sustainability	Health and wellbeing	Future Ready
HCC Corporate Plan (2019-2025)	Vision: Well-designed communities Cleaner, greener, more environmentally sustainable county Natural environment and diverse habitats to be protected Residents to be engaged in local issues Commitment: Working with our partners, we will act to limit the impact of climate change by developing an ambitious Sustainable Hertfordshire Strategy and taking a countywide approach on issues such as air quality and energy use.	Vision: Healthy And Safe lives: We want everyone to have the opportunity to live healthy lives for as long as possible and to live safely in their communities. Joined up health and care services and improve physical and mental health; Fewer hospital admissions; For residents to make changes to their lives to improve and maintain their own health. Commitments: Improve the health of the county's population, employing preventative strategies to help reduce or relay the need for health and care services.	Vision: Improve Hertfordshire's strategic road and rail network Commitment: Implement our long-term Strategic Transport Vision for the county.
Hertfordshire Local Flood Risk Strategy	Aim2a Opportunities will be sought to work with others to better deliver management of local flood risk in Herts. SuDS policy statement 9: Sustainability and additional design criteria Aim 6a: New development must manage its own flood risk, not contribute to flood risk in the local area and must take into account the effects of climate change. Aim 6b New development must make appropriate arrangements for the management and maintenance of features put in place to manage local flood risk. Aim 6c where possible, new development should contribute to reducing any existing flood risk in the local area.	Aim 2b Flood risk measures should be multi beneficial as far as possible, integrating flood risk management solutions alongside sustainable development and incorporating social and environmental benefits.	Aim 1: Flood risk will be actively managed and we will seek to predict and manage future risk as well as reacting to flood events. Principle 3: Improving our understanding of flood risk to better inform decision making: Aim 3a information on sources of flood risk in Hertfordshire will continue to be developed and improved. Aim 3d Information on flood risk will form the evidence base to help focus local resources and funding. Principle 4 Supporting those at risk of flooding to manage that risk Aim 4a communities should understand the information available to them on flood risk Aim 4b The support available to communities should aid preparedness and resilience Aim 4c information on local flood risk will be made available to assist in preparing for flood events. Aim 4e the roles and responsibilities of the various organisations involved in managing flood risk before, during and after in a flood event will be clear. Aim 5d: Potential funding for flood risk management projects will be prioritised according to cost-benefit and a range of weighting factors to take into account the evidence of flooding and sustainability of the proposed solution. This will ensure that resources are dedicated in areas where it will be most effective. To properly manage flood risk, the impacts of both past and future flooding need to be understood. Flood investigations aim to help those affected by flooding to understand why flooding occurred and which RMA can best advise on how the risk might be managed in the future.

Document title	Relevant themes covered		
	Environmental sustainability	Health and wellbeing	Future Ready
Highways Infrastructure Asset Management Plan	Objectives: T5: Consider and manage the environmental impact of the network, now and in the future, both in terms of our works and the effect they will have on the use of the network	Objectives: T2: Consider and manage the safety of the network, now and in the future T4: Consider and manage the accessibility of the network, now and in the future	Objectives: T6: Maximise the opportunity for investment to maintain and improve the condition of the transport network
Intalink Bus Strategy	Action 4: Raise and enforce quality standards by stipulating and enforcing minimum standards, in terms of acceptable reliability, punctuality and vehicle emissions.		Action 2: Identify opportunities for longer term bus priority packages through the County Council's highway strategy development process for future delivery. Action 8: Protect and enhance bus interchange capacity by facilitating access to locations such as town centres and between rail and other bus services.
Local Industrial Strategy (2019)			Particularly in urban areas, transport will become a service and reliance on private cars (particularly fuelled by petrol or diesel) will decline.(13) Strategic themes for Hertfordshire: Herts must respond to the climate crisis and deliver future economic growth in a far more resource-efficient fashion than previously.(20) They must also be digitally exemplary, and equipped to devise as yet unknown and unknowable solutions for sustainable mid-21st century living and working (39).
Local Transport Plan 4	Objective 7: Reduce Carbon Emissions Policy 9: Buses; promotion and support bus services to encourage reduced car use. Policy 12: Network Management; manage and reduce traffic congestion, prioritising strategic routes. And making more efficient use of the highway network. Policy 14: Climate Change Network Resilience; design, construct, maintain and operate all infrastructure in the light of the risk from a changing climate. Policy 19: Emission reduction, modal shifts, EV use encouragement Policy 20: Air quality; CAZ, monitoring, AQ Strategic Plan. (Health) Policy 21: Environment; minimise impacts of traffic/transport infrastructure, visual intrusion of highways infrastructure, street clutter, noise issues; protect and enhance quality of public spaces. Minimise/mitigate impact of highways improvements, and demonstrate environmental gains.	Objective 8: Make journeys and their impact safer and healthier Objective 9: Improve access and enable participation in everyday life through transport. Policy 1: Transport user hierarchy - opportunities to reduce need to travel/travel demand; Considers vulnerable road users; Passenger transport user needs Policy 6: Accessibility; Travel options and choices Policy 7: Active Travel-walking: encouragement and promotion of Walking. Policy 8: Active Travel-Cycling: Increased priority, provisions, and safety for cyclists	Objective 4: Enhance journey reliability and network resilience across Hertfordshire Policy 2: Influencing land use planning - Planning for alternative use to car, key services accessed by walking and cycling (Health) Policy 3: Travel Plans and Behavioural Change, to maximise potential to achieve modal shift. Policy 4: Demand Management; considering greater traffic demand in short term Policy 17: Road Safety; ultimate vision of Zero fatalities and serious injuries. Policy 18: Transport Safety and Security; resilience in transport system prepared for instances of major alert Policy 22: Asset Management; implementation of LTP4; good practice in AM; investment into network; policies cost effective maintenance of network to reduce future maintenance liabilities Policy 23: Growth and Transport Plan; considers current and future challenges, inform LPs and Infrastructure Delivery Plans in Borough/District.

Document title	Relevant themes covered		
	Environmental sustainability	Health and wellbeing	Future Ready
People Strategy (2019-2021)			Leading on the future sustainability of the organisation through collaboration and innovation and the delivery and support of major change initiatives.
Pollinator Strategy	- The Council will ensure the needs of pollinators are represented in policy and guidance - Protect, increase and enhance the amount of pollinator habitat in Hertfordshire to help prevent extinctions; and improve the status of any locally threatened pollinator species. - Increase awareness of pollinators and their habitat needs across local residents, businesses and other landowners - Increase the contribution of land under the ownership of, or managed by the Council to pollinator conservation - Improve our knowledge and understanding of pollinators in our local area.		Where relevant the council will join forces and participate in other local, regional or national pollinator programmes or projects. Joined up and collaborative action for pollinators will help ensure a future for these very important species.
Prevention Strategy		Hertfordshire citizens embracing health and wellbeing and taking responsibility for their communities (p.10)	
Rights of way Improvement plan 2017/18 - 2027/28	Core actions: Create off road routes linking communities with places of work, schools and other local facilities. Ensure the off-road network is protected, extended and enhanced through development proposals.	Core Actions: Develop routes that cater for the needs of people with limited mobility and visual impairment. Reduce the number of physical barriers on the network Promote Rights of Way and the health benefits of physical activity in the natural environment Extend the network for cyclists, horse-riders and horse & carriage drivers Develop a range of circular off-road routes which support health and wellbeing. Work to improve the safety and attractiveness of the network affected by busy transport routes.	Core actions: Develop links into the countryside from towns
Risk Management Policy	Applies to policy as a whole	Applies to policy as a whole	The county council seeks to minimise, though not necessarily eliminate, risk; managing threats to the organisation while supporting innovation and maximising opportunities.

Document title	Relevant themes covered		
	Environmental sustainability	Health and wellbeing	Future Ready
Road Safety Strategy	The purpose of the strategy sets out the county council’s aspirations for casualty reduction and prevention. The intention is to encourage a change in attitude and behaviour and deliver a safer and greener highway environment. Contributes to achieving LTP policies and strategies including, climate change, intelligent transport systems (Future ready); quality of life and environmental impacts (Air and noise). Covers LTP goal: Enhance the quality of life, health and the natural built and historic environment for all Hertfordshire residents. Collision causes: Environment 9% associated with layout and condition of highway or environment (e.g. bend or weather conditions).	Interventions and initiatives: Education, training, publicity - - Young drivers - Safe drivers - influence attitudes and affect positive behaviours towards safer and greener driving - Safer powered two wheelers - Encourage post-test training, and adoption of safe-riding attitudes and behaviour. - Safer pedestrians - Particularly adults (from research findings) - Safer cyclists - cycle training - Speed (Speed Strategy) - cameras, Speed Indication devices, Community speed watch - Alcohol/Drugs/Distracted/ Seatbelts - Safety Engineering/ Identification methods/ cost benefits / Consultation / Monitoring and evaluation. Transport Impact Assessments at the development stage of a scheme Urban transport plans (UTP) - Framework to focus transport improvements in a specific geographical area. - provide a clear, definitive list of the transport issues in the area Improved coordination Road surface grip Highway maintenance Travel Plans Safety audits	Vision: to provide a safe, efficient and resilient transport system that serves the needs of business and residents across Herts and minimises its impact on the environment. Changes in the economy and traffic levels may have a bearing on future trends in collisions and casualties as may our ageing population, the effects of promoting sustainable but more vulnerable modes and driver distraction due to in-car technology. Despite reductions we still expect to see young drivers, PTWs, pedestrians and cyclists being significantly involved in injury collisions and casualties. Further detailed analysis and investigation of the causes of pedestrian and cyclist collisions and casualties will also be carried out to inform future programmes. Road safety cameras may not be funded through central government in the future.
Roads in Hertfordshire: A Design Guide (2011)		Design for Access: For pedestrians / cyclists For people with limited/impaired mobility/ Hearing/sight Emergency service vehicles	Design for Safety Design for Access: to future dwellings Scheme Promoters should take into account the possibility of future development when designing road layouts. For the foreseeable future, the car is expected to remain the dominant mode of transport. Future maintenance costs/frequency will be dependent on the design process. Using good practice and designing with maintenance in mind will lead to an asset that needs less work to keep it in good operating condition in the future.

Document title	Relevant themes covered		
	Environmental sustainability	Health and wellbeing	Future Ready
Hertfordshire Skills and Employment Strategy		Towards fuller employment, supporting vulnerable adults into employment, increasing the available workforce and enabling priority groups to fulfill their potential.	- Developing our future workforce - supporting young people aged 16-24 years in the transition from education to employment. - provide skills to drive growth. Working with business and training providers to improve the skills of both the existing workforce and the future labour market in order to sustain economic growth.
Speed Management Strategy	Environmental benefits may include: driving more slowly at a steady pace will save fuel and reduce pollution. Walking and cycling can make a very positive contribution to improving health and tackling obesity and congestion, and reducing carbon emissions and improving the local environment. Goals and strategic vision of SMS: Enhance the quality of life, health and the natural, built and historic environment of all Hertfordshire residents. Reduce transport’s contribution to greenhouse gas emissions and improve its resilience.	Proposed benefits as a part of schemes: Providing road conditions that encourage and facilitate the take-up of active and sustainable transport modes, such as walking and cycling with associated health and wellbeing benefits. SMS vision: Improve the safety and security of residents Improve transport opportunities for all and achieve behavioural change in mode choice.	C43: Careful consideration will be given to material choices for gateway and entrance features with respect to future maintenance.
Sustainable Hertfordshire Strategy and Programme Plan (2020)	Carbon neutrality for own operations by 2030 Improve biodiversity on our land by 20% by 2030 Zero waste to landfill by 2030 Net Zero GHG county before 2050 Improve wildlife in our land and water by 20% by 2050 Increase resource efficiency threefold in the county by 2050		All operations and services are ready for future climates. Our communities are ready for future climates.
Sustainable Modes of Transport Strategy	Vision: Place: Limited impacts of climate change Improved local environment and green infrastructure Heritage and places of character retained Aims: To reduce the use of the car for journeys to, from and between educational establishments to improve the infrastructure of the local environment Aim: to improve the quality of the local environment by reducing traffic in and around school sites.	Aims: to improve accessibility to, from and between educational establishments to improve child road safety and safety of the school community to improve child health including and help address obesity, to increase physical activity, improve mental health and wellbeing and to improve air quality.	Challenges identified in LTP4 include significant housing growth planned in future years, much greater in scale than recent times. The country’s population is forecast to grow by 21% by 2039 from 1.18million in 2016. With travel demand increasing in future years, continued reliance on high levels of car use will lead to worsening congestion and journey time reliability. Further traffic growth will have a negative impact on public health.

Chapter 4

Validation and Master Planning

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Validation and Master Planning

Introduction

- 1.1** This chapter provides guidance on how due consideration of transport and its relationships to land use planning and the environment can help deliver Hertfordshire's vision. Developments will pass through the 'Site validation' and 'Master planning' stages and projects in HCC's LTP Delivery Plan the 'Initiation' and 'Feasibility' stages.
- 1.2** All proposals should demonstrate compliance with Hertfordshire's Local Transport Plan (LTP4). This is tested at the gateways at the end of each of these two stages in accordance with the testing regime set out in Part 1 Chapter 4.
- 1.3** Promoting sustainable development to meet Hertfordshire's vision for sustainable and responsible development demands the shaping of schemes at the master planning stage that reduce the need for car-based travel. Walking, cycling and passenger transport should be at the core of the transport infrastructure provision.
- 1.4** The consideration of transport at the master planning stage for developments has traditionally been based on the relatively free movement and parking of motorised traffic vehicles. Provision for sustainable modes of transport tended to be fitted in at a later stage alongside retrofitted traffic calming. This often resulted in poor solutions. The public spaces in these developments are often minimal and uninviting as their designers and builders prioritised cars over walking and cycling.
- 1.5** Homes are usually built with car-based travel in mind. They often have poor accessibility to footpaths, cycle routes and passenger transport. These car-dominated developments often lack the mix of uses or local services that enable people to remain self-sufficient in their own neighbourhood
- 1.6** Planning for higher density, mixed-use developments, encourages greater trip internalisation and use of sustainable modes. Incorporating high quality walking, cycling and

passenger transport infrastructure at the master planning stage will encourage higher proportions of travel by these modes.

- 1.7 Major life events, such as moving into a new home, can provide a stimulus for changing behaviour. However, this means the sustainable travel choices and the local facilities need to be in place from day one. If they are not, people will tend to use less sustainable transport modes in the interim. Travel habits form rapidly and can be hard to change when the sustainable choices become available.
- 1.8 Sustainable travel choices have to be as attractive, or more attractive than car use. People choose the mode that is quickest, cheapest, and most convenient based on the choices available to them.
- 1.9 **Active modes are considered to be walking, cycling, equestrian, unpowered micromobility options** (such as rollerblades, tricycles and scooters, wheelchairs) **and power-assisted micromobility options** (such as electrically assisted cycles).
- 1.10 Active modes are inherently sustainable given that they are non-motorised or very low energy options, require minimal highway space and positively contribute to health, wellbeing and people-centred placemaking.
- 1.11 The inclusion of micromobility options embraces emerging mobility technologies, such as e-scooters and public bike share.
- 1.12 For Hertfordshire's transport planning purposes there are two passenger transport categories.
- 1.13 PT1 passenger transport modes include trains, Mass Rapid Transit (MRT) and buses with more than 8 seats operated as time tabled public services, works buses, school buses or Demand-Responsive Transport (DRT) services.
- 1.14 PT2 passenger transport modes include hackney carriages, private hire vehicles and demand-responsive transport vehicles with 8 or less passenger seats.
- 1.15 For the purpose of this guidance, **sustainable modes include PT1 passenger transport modes, micromobility and active modes.**
- 1.16 PT2 and car share/carpool/car club trips are more sustainable than single occupancy private car use in some circumstances (e.g. where they reduce vehicle ownership in households), but they are less sustainable than walking, cycling and PT1 passenger transport journeys. As the economic and social impacts of each shared car trip are equivalent to those of each single occupant vehicle trip they are excluded from the definition of sustainable transport for the purposes of this guidance.

- 1.17** The amount and safety of active travel can be influenced by the presence of heavy goods vehicles. The volume of HGVs is, therefore, an influencing factor in determining appropriate provision for active travel. To this guidance a high volume of HGVs is defined as total buses and HGVs exceeding 500 per day (highest flow, whether weekdays or weekends).
- 1.18** Positively influencing travel behaviours depends on personal choice, so a range of measures that ‘push’ and ‘pull’ people towards desirable travel modes is required.
- 1.19** Combining measures that are known to contribute to sustainable travel patterns increases their effectiveness as a variety is more likely to meet more people’s needs, for a wider range of trips.
- 1.20** Infrastructure investment is important but works best when accompanied by behavioural measures to help people choose sustainable travel modes.
- 1.21** The promoter of a strategic development site may be required to deliver some or all the transport measures associated with the development. All promoters may be required to accommodate measures that would be delivered by other parties and/or to make financial contributions to wider sustainable transport initiatives.



Preparing for master planning through site validation and project initiation

- 2.1** The term ‘master planning’ used in this guidance refers to the activity of scoping the form and nature of a scheme or development regardless of its size. While not all of the features described in this chapter will be relevant for all scales of scheme or development, the thought processes and principles remain the same.
- 2.2** Part 1 Chapter 3 sets out the key stages and gateways that the promotion of a strategic development or transport project in the LTP Delivery Plan should follow to gain the necessary approvals and deliver successful outcomes.
- 2.3** LTP4 compliance tests are undertaken at the key gateways. The first of these is/ are:
- ‘Site validation’ for developments
 - ‘Inception’ for HCC major projects, having completed the Initiation stage
- 2.4** The first gateway tests the site or project against published policies, identifying constraints and risk assumptions. Therefore, Scheme promoters should familiarise themselves with the policies in Hertfordshire’s LTP4. This guidance has generally been prepared to support LTP4 and, in particular, policy 5: Development Management, which states:
- 2.5** The county council will work with development promoters and the district and borough councils to:
- a) Ensure the location and design of proposals reflect the LTP Transport User Hierarchy and encourage movement by sustainable transport modes and reduced travel demand.
 - b) Ensure access arrangements are safe, suitable for all people, built to an adequate standard and adhere to the county council’s Highway Design Standards.
 - c) Consider the adoption of access roads and internal road layouts where they comply with the appropriate adoption requirements and will offer demonstrable utility to the wider public. Where internal roads are not adopted the county council will expect suitable private management arrangements to be in place.
 - d) Secure developer mitigation measures to limit the impacts of development on the transport network, and resist development where the residual cumulative impact of development is considered to be severe.
 - e) Require a travel plan for developments according to the requirements of ‘Hertfordshire’s Travel Plan Guidance’ Only

consider new accesses onto primary and main distributor roads where special circumstances can be demonstrated in favour of the proposals.

- f) Resist development that would either severely affect the rural or residential character of a road or other right of way, or which would severely affect safety on rural roads, local roads and rights of way especially for vulnerable road users. This should include other routes which are important for sustainable transport or leisure.
- g) Ensure that any new parking provision in new developments provides facilities for electric charging of vehicles, as well as shared mobility solutions such as car clubs and thought should be made for autonomous vehicles in the future.

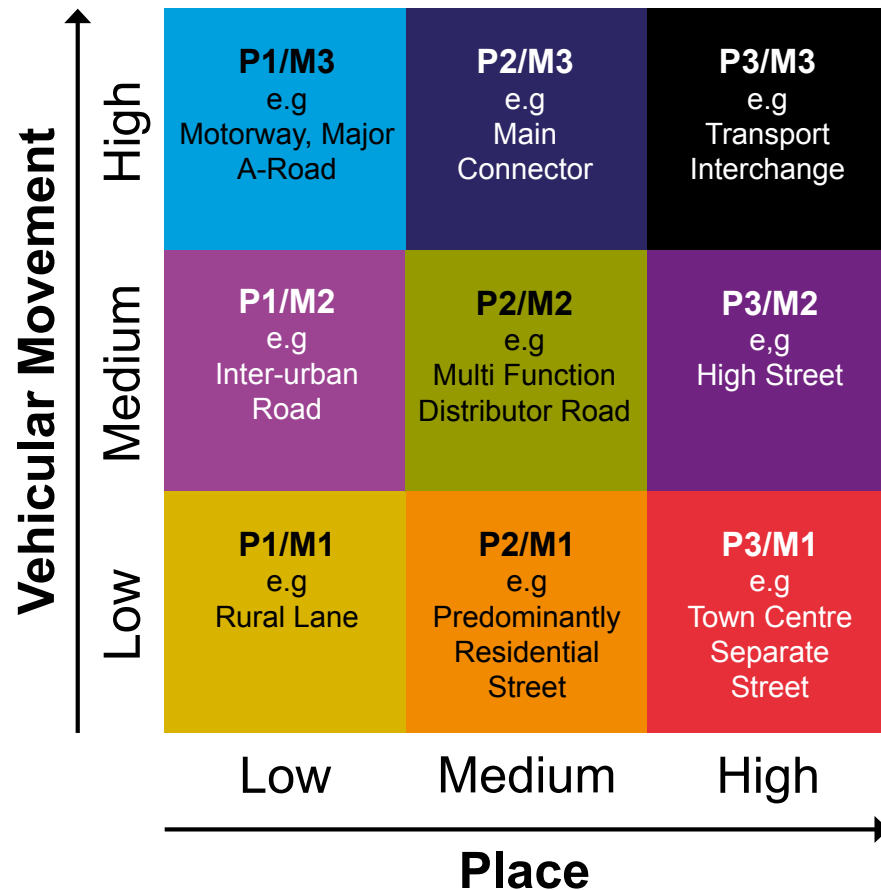
2.6 An assessment of the fundamental suitability of a development site or transport scheme to set the context for Master Planning should identify the key local trip attracting destinations. This will highlight the connections that need to be made or enhanced between those locations and the site.

2.7 This important 'Site validation' precursor to Master Planning should set out how the site or scheme would connect to these locations by walking, cycling and passenger transport. Distance will influence the choice of travel modes that need to be maximised.

2.8 Access to and in any development must be available to all sections of the community. In development design, the provision for motor vehicles should never be to the detriment of the access requirements for active travel, including those with limited mobility.

2.9 To aid the practical application of the LTP4 policies Hertfordshire has developed a 'Place and Movement,' (P&M) matrix, which recognises the different uses that streets have. Described in Chapter 5, application of the P&M matrix will help identify appropriate highway provision at the master planning stage.

2.10 The second key LTP4 compliance test at Gateway 2 is applied to the Master Plan for the development or scheme.



2.11 The Master Plan for a county council promoted transport project is the same as the Preferred Option that is selected and agreed at the Gateway 2 Feasibility Stage.

2.12 The following sections in this chapter provide additional guidance on principles followed by recommending a practical approach to undertaking site validation (Initiation) and master planning.

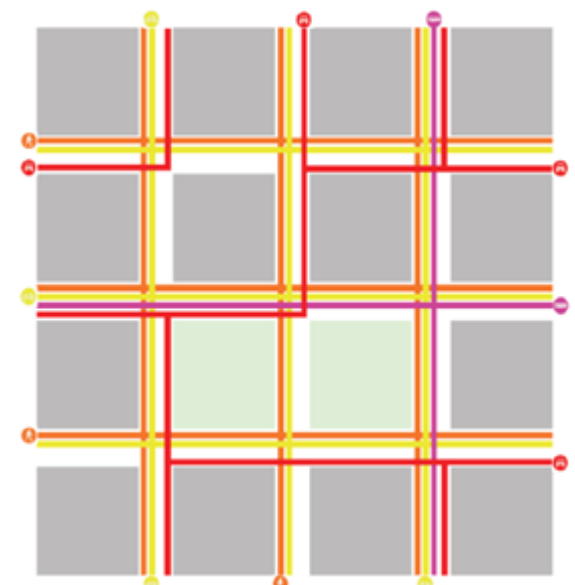
2.13 The Master Plan for a county council promoted transport project is the same as the Preferred Option that is selected and agreed at the Gateway 2 Feasibility Stage.

2.14 The following sections in this chapter provide additional guidance on principles followed by recommending a practical approach to undertaking site validation (Initiation) and master planning.

Placemaking & land use planning

- 3.1** The design of the urban environment can encourage active travel and contribute positively to public health and social wellbeing. A key part of this is limiting the access of motor vehicles, and where access is provided, the volume and speed of vehicles in the public realm (including public squares and residential streets). This is controlled through car parking and traffic management measures such as filtered permeability.
- 3.2** Ensuring, through master planning, that key destinations (employment, education, retail, leisure facilities) are close to where people live enables easy walking (ideally within 1km) and cycling (5 km). These facilities need to be carefully located throughout a development, rather than concentrated in one area leaving some residents without easy access to one land use or another. Similarly, the location of new development with good linkages to existing facilities is also vital.
- 3.3** A good mix of uses in new developments encourages more sustainable travel patterns, by allowing more trips to be made internally. This is increased by building at higher density and creates a virtuous circle of more active streets which encourage more walking and cycling.

- 3.4** A core part of the master plan should be to restrict vehicle through movements in order to make walking and cycling the most direct and convenient travel mode for most journeys.



- 3.5** If a compact place that people can cross quickly on foot or by bike is created in a residential area with strong neighbourhood centres then many leisure and shopping trips can be completed in the neighbourhood, reducing the need for longer distance travel and the consequent reliance on the car.

- 3.6** To further aid this, higher density development is encouraged as this delivers multiple benefits in terms of putting a larger number of jobs, services and day to day needs within walking and cycling distance.
- 3.7** Building at higher residential density increases the potential customer base for services (including passenger transport), improving their likelihood of success. It also reduces urban sprawl and allows more green space. Higher density means the distances involved to reach services can be reduced, thereby encouraging active travel.
- 3.8** It is recognised that some journeys cannot be internalised in a development, but careful land use and transport planning can ensure that a good proportion of those journeys can be made by active travel to existing or new facilities and jobs near the development.
- 3.9** Designing new developments around passenger transport facilities and enhanced services means that further destinations can be accessed most conveniently without a car.
- 3.10** Land use planning can help to reduce travel distances to the extent that residents do not necessarily need to own a car. While entirely car-free lifestyles are unlikely to become widespread in Hertfordshire, all developments should aim to be 'car light'. This should be achieved by creating an environment where people at least question the need for a second car as

the majority of journeys can be made by sustainable means and, for the rare times when a second car is needed, there is access to a car club. This also includes ensuring that the active travel environment should be of the highest quality and there should be a range of employment, education and other facilities within active travel distance.

- 3.11** The following Table summarises land use and place making strategies together with supporting, complementary strategies applied at the master planning stage that can help deliver Hertfordshire's vision.

Core Strategy	Complementary measures
Reduce dominance of motor vehicles in support of LTP4 policy 1	Smarter choices
Make all urban facilities easily accessible by active travel by providing residential, leisure and employment land uses together	Personalised Travel Planning (PTP)
Use road restrictions and filtered permeability to reduce traffic on internal roads	Active Travel infrastructure
High density development instead of suburban sprawl	Parking measures
Availability of public transport for longer distance trips in support of LTP4 policies 2, 9 & 10.	

Local character & heritage

4.1 The rigid application of national highway engineering standards has contributed to residential developments becoming increasingly uniform across the country. Hertfordshire County Council believes that local interpretation of national standards and better integration with the local area are of greater importance in building high quality sustainable developments.

4.2 *In designing new development, a primary aim should be to create a sense of local character.*

4.3 Elements that influence character at the master planning stage can include local heritage and function, building height and density and topography.

4.4 A quality which, while difficult to define, is easily recognised by those experiencing environments which possess it. Creating a sense of character should instil a sense of ownership in the residents or occupiers of the development.

4.5 Where appropriate Scheme Promoters should collaborate with historic environment specialists to minimise harm to the historic environment and maximise opportunities for enhancing the significance of heritage assets. Engaging with historic environment specialists at the site validation Stage helps

ensure that the Scheme Promoter is fully informed of the risks and opportunities captured in a Local Character & Heritage Plan setting out:

- The local environment and Local Plan context
- A summary of development constraints
- The interest and importance of site history, including archaeological remains at the site or in the vicinity leading to requirements for archaeological excavation, research, protection and interpretation
- The visual impact and the safeguarding of sensitive views and settings

4.6 Capturing local character does not just apply to urban realm. The promotion of new settlements, expansion of the urban fringe and schemes such as rural bypasses require consideration of the local rural landscape and the character of the existing local network of lanes and other Public Rights of Way.

4.7 Hard and soft landscaping is encouraged as a key element in maintaining and/or improving local character. This may reflect historic features of ecological value, such as trees, banks, hedges, verges, built structures, etc. which, if they cannot be retained, could be compensated or mitigated for.

- 4.8** The Scheme Promoter should note that there are specific requirements when working in the Chilterns Area of Outstanding Natural Beauty. Guidance can be obtained from the relevant Local Planning Authority (Dacorum, Three Rivers or North Hertfordshire) and HCC as well as from the Chilterns AONB Board.
- 4.9** Unless there are future development plans, new sections of diverted lanes and Public Rights of Way should be of the same scale and nature as those of the network they are connecting into.
- 4.10** The Scheme Promoter should note that some existing verges are designated as Local Wildlife Site / Heritage Verge or may have a particular local wildlife importance. Such verges exist mainly in rural locations. The Scheme Promoter or designer should contact HCC or the Local Planning Authority for advice if the proposed development would affect an existing highway verge.



Planning for health & wellbeing

5.1 Transport projects and transport provision for developments has a significant influence on health and wellbeing. The main impacts are:

- Exposure to excessive noise is associated with poorer mental health outcomes, particularly among older adults and children. It is also linked with higher anxiety levels among adults
- Air pollution is the largest environmental risk to the public's health in the UK
- Air pollution kills 64,000 people annually in the UK at a 2020 annual cost of £20 billion
- House prices fall nearer heavily trafficked roads meaning that poorer families are often worst affected
- Access to, physical exercise in and engagement with, the natural environment is associated with numerous positive health outcomes, including improved physical and mental health, and reduced risk of cardiovascular disease, risk of mortality and other chronic conditions.

5.2 The following seven key factors should be considered in the planning of new development to ensure that it is health promoting, sustainable and mitigates against widening gaps in health inequalities:

- Air quality
- Movement and access
- Neighbourhood and community spaces
- Housing and development design
- Local economy, employment and education
- Quality open space, play and recreation
- Healthy food choices

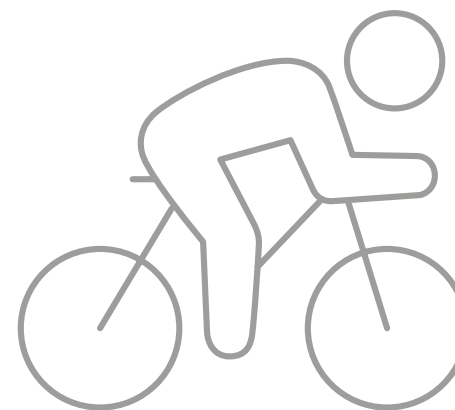
5.3 The first six factors are influenced by development and transport master planning, and as such this guidance has been prepared to support those themes.

5.4 Scheme Promoters should note that residential developments of 100+ units are required to prepare and submit a Health Impact Assessment (HIA).

5.5 In some circumstances, HIAs will be requested for developments with less than 100 units if there is the potential for negative health impacts to the new and existing communities.

Providing for active travel

- 6.1** All infrastructure for active travel shall be accessible to all: not only in relation to disabilities and the public sector equality duty, but also in terms of it being perceived to be safe.
- 6.2** The provision of infrastructure shall be inclusive, starting with the principles that all potential walkers, cyclists and their bikes shall be catered for in its design.
- 6.3** The appropriate level of provision for equestrians should be established at the master planning stage by considering the local context including the existing PROW network that is suitable for equestrian use and the presence of local stables.
- 6.4** Provision for active travel should meet five core design principles:
- Safety (including perception of safety)
 - Directness
 - Coherence
 - Comfort
 - Attractiveness
- 6.5** The whole journey or route should be designed with a coherent and consistent provision. Networks should be planned and designed to allow people to reach their day-to-day destinations easily, along routes that connect, are simple to navigate and are of a consistently high quality.
- 6.6** Junctions (nodes) and the routes between them (links) are equally important and should be improved together rather than one or the other. A single node or link that is not perceived to be safe enough can result in the whole route being underused.



Planning for walking

- 7.1** Walking forms a key part of almost every journey. A strong culture of walking and cycling is necessary if the infrastructure is to be used and modal targets achieved. This can be enabled by providing pleasant walking environments and short distances to key destinations/amenities. Creating spaces that are pleasant and safe to walk also helps to provide outdoor space for people living in space efficient housing such as apartment blocks.
- 7.2** Reallocating physical space from driving to walking can represent a commitment to pedestrian safety and access. Smarter Choice measures are particularly effective in new developments because people are more likely to make behavioural changes during a period of change (e.g. moving house, changing job or school).
- 7.3** *Providing for people walking must be the first and primary consideration in formulating scheme proposals. Walking must be considered as the principal form of travel for trips under 1 km and provided for accordingly.*
- 7.4** Walking routes should be carefully positioned and provide easy access for all, regardless of physical ability, so as to maximise their use. If routes are segregated from passing traffic, they will need to be overlooked by dwellings or other buildings, as people generally prefer to walk along routes where they can be seen by drivers, residents and other pedestrians.
- 7.5** Links with the wider pedestrian network, both existing and planned should be created. Particular consideration should be given to connecting pedestrian routes with local centres, healthcare facilities and schools. In addition, opportunities to link to the existing rights of way network for active leisure pursuits should be taken up where safe and practical.
- 7.6** *Footways and footpaths shall be well aligned, follow a direct route from point to point, have reasonable and practicable gradients and be sufficiently wide and free of obstruction to enable different users (pedestrians, prams, wheelchairs, etc.) to pass each other freely.*

7.7 The following table summarises strategies for enabling walking together with supporting, complementary strategies applied at the master planning stage that can help deliver Hertfordshire's vision

Core Strategy	Complementary Measures
Smarter choices programmes including PTP and promotional events	Filtered permeability* Traffic demand management Parking management including protection against footway parking Speed management
Introduction of innovative pedestrian-friendly concepts (shared and pedestrianised zones), further traffic calming measures, pedestrian priority crossings and easier crossing of main roads and side road crossing treatments	
Removal of pedestrian-unfriendly infrastructure such as flyovers and subways	

* **Filtered permeability is an urban planning concept that removes through traffic on selected streets to create a more attractive environment for walking and cycling**



Planning for cycling

- 8.1** Encouraging cycling necessitates a combination of infrastructure and behavioural measures. Segregated cycle lanes or tracks and secure cycle parking can both contribute to increasing cycling mode share. The use of Personal Travel Planning (PTP), cycle training and promotional events can be used to increase awareness of these measures and to remove the apprehension often associated with cycling. Cycle hire schemes could also be introduced or existing local schemes enhanced and brought into the development.
- 8.2** *All scheme promoters shall provide specific, safe measures to assist cyclists. However, other ways in which cycling can be encouraged are through land use planning, urban realm and traffic demand management.*
- 8.3** The greatest success can be achieved by implementing holistic area-wide schemes to reduce traffic levels and make cycling more attractive to all. Integrating cycling with other modes is essential. Further guidance on network mapping and planning can be found in Part 3, Chapter 4: Planning cycling infrastructure.
- 8.4** *All routes for cyclists should be convenient, direct, accessible, safe comfortable and of a quality to be attractive. They should be designed to encourage cycling as part of multi-user routes, along with pedestrians and passenger transport.*
- 8.5** *In essence cycle routes should be designed such that anyone aged 12 to 80 could be expected to cycle along them independently and safely.*
- 8.6** *New cycle routes should link into longer distance networks, connecting to existing destinations.*
- 8.7** *Developers shall ensure that there is adequate provision of high quality safe, cycle storage in their development (including local facilities, employment locations and in homes) and be prepared to contribute to the provision of storage at local public destinations.*
- 8.8** Smarter choices measures are particularly useful in new developments because people are more likely to make behavioural changes during a period of change (e.g. moving house, changing job or school).

8.9 The following Table summarises strategies for encouraging cycling together with supporting, complementary strategies applied at the master planning stage that can help deliver Hertfordshire's vision.

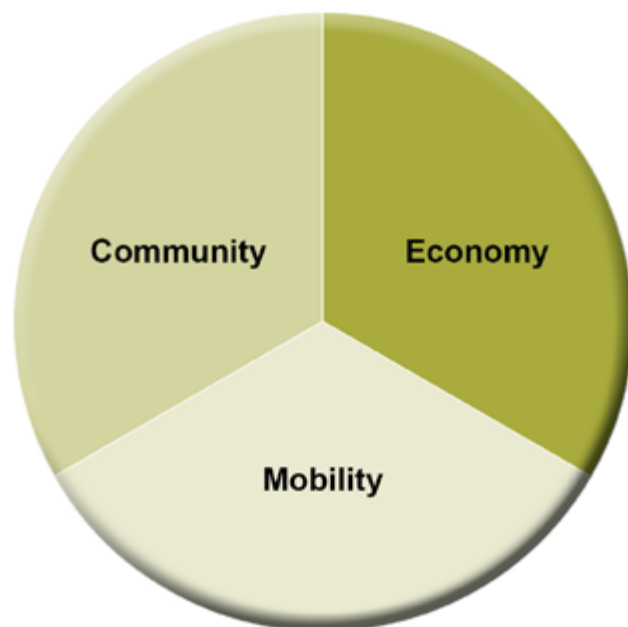
Core Strategy	Complementary Measures
Provision and expansion of cycling infrastructure with priority measures to reduce conflicts between pedestrians, cyclists and vehicles and accommodate larger cycles such as cargo bikes	Filtered permeability
	Traffic demand management
	Integrated land uses
Maintenance of cycle routes at an appropriate standard	Parking measures
Cycle parking and bike hubs located at passenger transport interchanges	Speed Management
Introduction of cycle hire schemes including cargo and e-bikes	Providing free / promotional bike for new residents in lieu of Section 106
Increase the number of commuters and families who travel to work and school by cargo bike through wide cycle lanes and appropriately spaced cycle parking	
Cycle education and training	



Planning for passenger transport

- 9.1** There are several important elements for ensuring widespread uptake of passenger transport. A consistent element in places that secure high passenger transport mode shares is providing high quality links into existing PT1 passenger transport networks or providing forward-funded infrastructure that ensures rapid and direct connections to key destinations.
- 9.2** Enabling seamless use of all passenger transport between new communities and surrounding settlements will be vital to reduce car dependency.
- 9.3** High quality infrastructure is necessary to ensure that passenger transport more attractive than car travel. This may include measures to achieve journey time reliability, such as bus priority, bus lanes or bus gates for PT1 passenger transport.
- 9.4** The introduction of transport hubs will provide convenient interchange at a neighbourhood level for PT1 and PT2 passenger transport modes and last mile connectivity between passenger transport, demand responsive transport (e.g. taxi and app-based travel), car clubs, bike, eBike share and other services. They can also offer amenities such as electric vehicle charging points, cycle storage, workspaces, wifi, cafés and bike repair.
- 9.5** Basic transport hubs have three key characteristics:
- Interchange for passenger transport and active travel modes
 - The provision of space for rest and shelter that integrates or complements the surrounding public realm, while reducing dominance of the private car.
 - A pillar or sign which identifies the space as a transport hub which is part of a wider network and ideally provides digital travel information.
- 9.6** At their simplest a transport hub could contain a pillar, space for rest and shelter with cycle parking and provision for PT1 and PT2 passenger transport services to pick up and drop off. Transport hubs are a scalable concept that can be expanded, and strengthened to reflect local needs and demand, through alignment with other, non-mobility functions, aggregating community, economy and mobility into single multi-functional and multi-modal places.
- 9.7** Spread over an area, transport hubs provide a prominent network of defined sites providing services to connect people through sustainable travel and improve the public realm. Hubs could then not only provide better connectivity between different elements of mobility but also integrate more activities

into journeys, providing greater options and choices for users and simplifying and shortening the journeys people make.



- 9.8** Building in supporting commercial and community functions may reduce local vehicle kilometres travelled through the combination of functions in one place. These wider remit hubs, with the mixture of functions, could also provide a catalyst for reinvigoration of local economies and communities by focussing activity in highly accessible and connected locations, and with supporting local planning policies, become a focus for further high-density development.

- 9.9** Through this approach, hubs could move beyond being a modern transport interchange to being central to the future of local places and supporting the wider daily needs of communities

- 9.10** There are seven sets of potential components that could be considered, building in mobility, traveller facilities, placemaking, community and commercial functions and the resources to make transport hubs work:

- **Transport modes** – a range of transport modes that could be integrated in a hub;
- **Transport infrastructure** – the infrastructure to support the operation of mobility services e.g. bus stops, cycle hub, bike hire docks, EV charging, car club spaces, traffic calming, pedestrian crossings, etc;
- **Traveller facilities** – basic facilities to be provided, e.g. shelter, seating, lighting (on-street or onsite), heating;
- **Placemaking** – Strengthening the connection between people and the places they share;
- **Community functions** – basic community services or functions that could be provided in a hub and delivered by community groups, e.g. a library;
- **Commercial functions** – basic commercial services or functions that could be provided in a hub, e.g. office space;

- **Supporting resources** – components that support the overall delivery of the hub including energy, digital connectivity, flexible space (including land, building and kerb space), human capital and branding.

- 9.11** The combining of these components can make a hub a centre for activity helping to support local areas, especially where there is a lack of community or economic activity or the need for regeneration and growth.
- 9.12** In siting a new hub in a new development consideration should be given to the proposed primary function of the hub, viz: whether it is to serve a mobility purpose, an economic or community purpose.
- 9.13** Where there is a range of options in potential site location in an area (e.g. in a town centre) there may be a choice to be made between site locations that provide greater support to mobility operations and those that are closer to, or even integrate with the economic and community activity in an area.
- 9.14** Hubs may generate greater use where they are more aligned to the users' final destinations as they shorten one of the first mile / last mile journey legs.

- 9.15** The following table sets out key actions while undertaking site validation and master planning for developments including transport hubs

Site validation & master planning for transport hubs

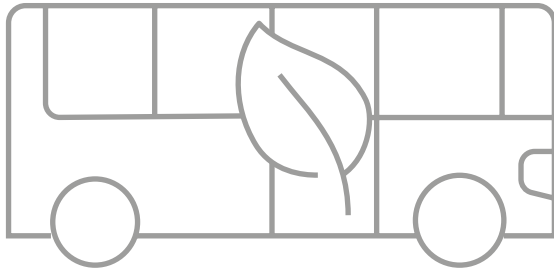
Site validation to identify strategic context for the hub	Top down: Identify the key hub functions driven by the transport vision and objectives. Bottom up: Identify the key challenges, opportunities needs of the economy and community in the broad hub locations.
Master planning to identify hub type.	Identify spatial context of the hub e.g. urban/peri-urban/rural and surrounding land uses and trip origins and destinations Identify potential users of the hub across community, economic and mobility functions Identify the appropriate hub type based on broad location and strategic context

- 9.16** As transport interchanges could involve a mix of adopted highway and privately-owned public realm served by passenger transport, it is important that concepts are discussed with Hertfordshire County Council at the master planning stage, so that land ownership issues are addressed and future stewardship models explored.
- 9.17** Accommodation for potential demand-responsive passenger transport services will allow for continued technological innovation and evolution of these forms of mobility which may complement or replace scheduled bus services. In time, these services could be fulfilled by autonomous vehicles, which may warrant consideration when designing busways and other bus priority infrastructure.
- 9.18** Transport hubs, bus stops and associated facilities should not be treated separately from road infrastructure and should be installed prior to first occupation of any development.
- 9.19** *All occupied parts of development shall be within 400m walking distance of a bus stop or transport hub measured along the public walking route. In a town centre location, areas with a significant proportion of elderly residents, around educational establishments and commercial and industrial developments the maximum walking distance shall be reduced to 200m.*



9.20 As well as integrating the provision of infrastructure and integrating it into new developments, financial pump-priming of new routes or services is crucial, along with integrated ticketing schemes, and strategically connecting passenger transport networks with key walking and cycling corridors.

9.21 The following table summarises strategies for promoting passenger transport together with supporting, complementary strategies applied at the master planning stage that can help deliver Hertfordshire's vision.



Core Strategy	Complementary Measures
New developments built around a high-frequency, reliable passenger transport provision including transport hubs of appropriate scale and scope	Integrated land uses (short distances to access passenger transport) Integration with First Mile – Last Mile initiatives Smarter choices PTP Cycle infrastructure Bike hubs
Introduction of smart cards, E-ticketing and integrated payments	
Giving free/promotional passenger transport tickets to new residents/as part of membership to car club	
High quality dedicated passenger transit infrastructure	
Co-ordination with Hertfordshire's Intalink Enhanced Partnership	
Future proof for demand responsive bus services & autonomous vehicles	

Planning development access points and permeability

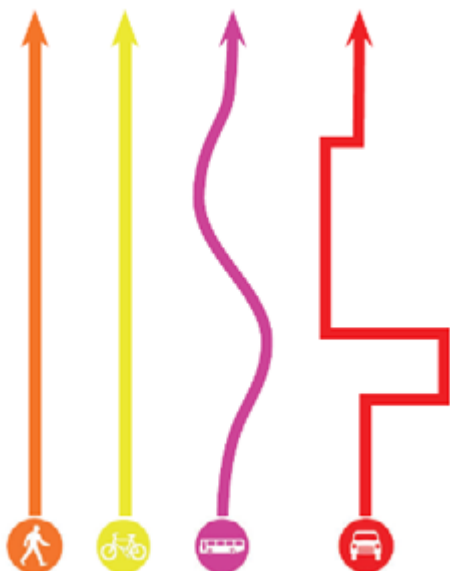
- 10.1** In accordance with LTP4 policy 5(f) HCC will only consider new accesses onto primary and main distributor roads where special circumstances can be demonstrated in favour of the proposals.
- 10.2** *Developers will need to demonstrate how access to their development meets the requirements of LTP4. In particular, they shall be clear how the proposals would create more favourable access for walking, cycling, emerging forms of micromobility and passenger transport than for the private car.*
- 10.3** Developments should be permeable for sustainable modes using Sustainable Travel Links, or Active Travel Links, while the number of access points for the private car will generally be limited to a single point.
- 10.4** The road serving the development should be looped and the connecting link to the existing highway network should not have other junctions in its length, nor have direct access to dwellings. It should be kept short but greater than 25m in length. The design should aim to achieve the same design speed as the road it connects to (preferably 30kph).
- 10.5** Additional accesses for cars into the development from the existing network will only be considered where the development can clearly demonstrate that after all the measures to support sustainability have been implemented an unacceptable impact remains because of the residual vehicle-based trips. Congestion on its own will not be reason enough, indeed a certain level of congestion may be desirable to encourage the desired mode share in favour of sustainable modes of transport.
- 10.6** Any additional accesses will also need to be provided on the basis that they favour sustainable modes over the car in accordance with LTP4 policy 1.
- 10.7** All developments, even car free, needs to have access for emergency services.
- 10.8** Any development of 50 units and above shall include provision for one emergency-only access as well as the one general vehicular access.
- 10.9** The fire and rescue services should be consulted on whether additional emergency access points are required for any development above 100 units.

- 10.10** Consideration should be given to providing emergency access along a Sustainable Travel Link or Active Travel Link.
- 10.11** Consideration should be given to accommodating routes for refuse collection services along bus access routes, while meeting the requirements of enabling refuse collection within 55m of all dwellings.
- 10.12** Where a development proposal may result in road connections or frontage accesses which are beyond those normally permitted, the scheme promoter should undertake consultation with HCC at the earliest opportunity.



Planning traffic management

11.1 A key traffic management tool used in locations that achieve lower levels of car use is the designing in of filtered permeability. This involves reducing the ability for motorised vehicles to travel through the centre of an area by closing sections of streets to general traffic while maintaining access for pedestrians and cyclists, passenger transport, servicing and deliveries.



11.2 The benefits of this type of traffic management are wide ranging, including creating high quality ‘human scale’ spaces, reducing local pollution, increasing active travel and improving safety.

11.3 When filtered permeability is introduced at a network wide level walking, cycling and passenger transport become quicker than driving a car, and therefore the preferred choice for shorter distance trips.

11.4 Low speeds help to reduce the dominance of motor vehicles, thereby providing a greater degree of safety and security for those walking or cycling.

11.5 Measures to restrain speed should be in keeping with the local character and create an environment which makes drivers feel that to travel at higher speeds would be both dangerous and anti-social.

11.6 *By considering the relationship between the trafficked highway, local landscape, the public and built realm, master planning should lead to a development or scheme in which vehicle speeds would be managed naturally.*

Source: Lucy Saunders

- 11.7** Considering speed management at the master planning stage should avoid the need to introduce retrofitted traffic calming features. These are only ever a compromise for highway users, the local community and the streetscape. The associated costs would also be avoided.
- 11.8** The overall physical design of new developments should encourage motorists to drive at 20mph or less in predominantly residential areas and outside schools, playgrounds and other community facilities
- 11.9** Scheme promoters should keep in mind that emergency routes need not necessarily follow all-traffic routes, and that Active Travel Links can be designed to accommodate emergency service vehicles.
- 11.10** The needs of service vehicles, such as refuse collection vehicles, are important considerations in development design, but should not dominate the shape of an area.
- 11.11** The following table summarises strategies to be considered for motorised traffic management together with supporting, complementary strategies applied at the master planning stage that can help deliver Hertfordshire's vision.

Core Strategy	Complementary Measures
Filtered motor vehicle permeability to promote walking and cycling permeability and make car journeys less direct, through street typology and layout	Smarter choices PTP Parking management
Speed Management	Road Alignment Landscape Design Road Surface Finishes Informal carriageway, cycleway and footway relationships
Emergency and service vehicular access, while necessary, should not dominate the highway design, or shape of a development.	Traffic Regulation Orders Parking Controls Informal carriageway, cycleway and footway relationships

Planning for Rights of Way

12.1 *HCC has a duty to “assert and protect” the right of the public to unimpeded access to Public Rights of Way (PRoW).*

12.2 The PRoW network is widely used throughout Hertfordshire, particularly for leisure. It is also used for commuting and utility journeys, for example to and from schools and workplaces or as part of the National Cycle Network.

12.3 HCC’s Countryside & Rights of Way service is responsible for the protection, maintenance and improvement of the PRoW network.

12.4 Development or road improvement which is undertaken without regard to its effect on the PRoW network can cause serious problems.

12.5 Scheme promoters should be aware that PRoW are protected by the same legislation as all other highways and as such should be treated in the same way as existing highway. Their incorporation into a residential or employment setting should be sensitive to user safety and enjoyment so as to encourage use.

12.6 *Statutory procedures must be followed where development requires the creation, diversion or extinguishment, or temporary closure of a PRoW*

12.7 Informal consultation between scheme designers and promoters, HCC and the Local Planning Authority is encouraged while master planning a site that impacts on one or more Public Right of Way. This can ensure that potential disadvantages to the public in alternative arrangements for a PRoW are minimised and, where possible, the PRoW network improved for utility and recreational purposes. It is also likely to ensure that PRoW matters do not delay progress with a development.

12.8 In connecting parts of the existing PROW network through or around a development the new sections of PROW should be promoted with the same or equivalent status enabling continuity of use for walking, cycling and equestrian use as appropriate.

Planning landscape and drainage

- 13.1** Landscape is important to providing a sense of place and local character. Well-designed landscaping that reinforces local character and provides interest will help to encourage walking and cycling.
- 13.2** Due to the restorative and mental health value of the natural environment, the design and integration of green infrastructure should ensure that all routes and spaces are accessible to all, with due consideration given to those with physical and visual disabilities as well as those with Autism Spectrum Disorder (ASD), genetic, learning and mental disorders.



Source: Lucy Saunders

13.3 Most of the critical success factors for a healthy street can be directly related to soft and hard landscape, namely.

- People choose to walk or cycle
- Shade & shelter
- Places to stop and rest
- People feel safe
- Things to see and do
- People feel relaxed
- Everyone feels welcome

13.4 The identification of landscape constraints and risks, including green & blue infrastructure and local character & heritage are critical factors that influence site or project validation.

13.5 Site or project validation should involve gaining a familiarity and understanding with:

- Local environment and Local Plan context
- Summary of development constraints
- Existing landscape character, tranquillity and local distinctiveness; scale/ impact/ appropriateness of development to its setting
- Enclosure, screening, security, privacy, soil fertility, pH, porosity, stability and ground contamination
- Areas/natural features needing protection, and vegetation worthy of retention or removal

- The location of existing trees and hedgerows. This is of importance when considered in relation to brownfield land as a large urban extension could have a significant impact on local habitats etc. Trees with TPO's and significant or designated Wild also need to be considered as part of this
- The historic setting to ensure that proposals are able to respect and integrate in the local context
- The local network of Public Rights of Way, and nature of existing open spaces to ensure that the green infrastructure complements connectivity and reinforces key routes and corridors
- Local landscape and habitat designations or protection in and adjacent to the site to ensure that proposals do not adversely impact what is already there
- Existing blue infrastructure in relation flood risk, streams and drainage to ensure that integration including prominence, exposure, gradients and capacity for water disposal/retention
- Ground conditions, contamination, land stability and water table
- Proximity to existing and potential sources of noise nuisance and any need for screening, acoustic mitigation measures, compatibility with proposed use
- Local topography including slopes, sheltered and shaded areas

- Proximity to existing and potential sources of noise nuisance
- Form of the skyline and views to ensure that the green infrastructure is able to respond to its local context, safeguarding sensitive views and settings
- Local climate, orientation and natural daylight.

13.6 The appreciation of the site constraints and risks should be captured in an outline Ecology & Landscape Strategy which is then developed to support the Master Plan. The Ecology & Landscape Strategy can encompass the Green Infrastructure Plan as required by the Infrastructure Strategy Standard.

13.7 The outline strategy should be developed to set a vision for the landscape indicating how gardens, driveways, paths, fences, gates, verges, open space, SuDs features, paving materials, street furniture, trees and shrubs can combine to help achieve the desired outcomes of sustainable travel and benefits to physical and mental health and in doing so:

- Reflect local character to enhance links between urban and rural connectivity
- Promote a green infrastructure-led approach that integrates a fully integrated network throughout the development
- Ensure that an integrated approach with blue infrastructure provision

- Safeguard space provision for generous walking and cycling networks
- Promote connectivity between surrounding green spaces, wider countryside and existing street green infrastructure
- In accordance with the Sustainable Hertfordshire Strategy, demonstrably contribute to the target of a 20% increase in green and blue habitats and spaces, across Hertfordshire, by 2030.
- Make provision for a tree canopy cover of minimum 20% (at maturity) for all new highways in urban areas.



Planning for parking

- 14.1** Parking provision in terms of its location, quantity, cost and the way users pay for it, is a strong influence on car use, and a key demand management tool. The availability of parking is also a determinant in whether people choose to own a car or not.
- 14.2** Low car ownership in new developments can be encouraged from the beginning through restricting residential parking levels and controlling on-street parking. By providing suitable alternatives (active modes for short journeys and passenger transport for longer journeys), this can be further enabled. Land use planning which places parking at the edge, or outside the development (with allowances for those with protected characteristics), alongside traffic demand management measures to reduce the permeability of the development to car traffic, can help to reduce the convenience of driving.
- 14.3** In Hertfordshire the Local Planning Authorities (LPAs), have the responsibility for setting and agreeing parking standards for new developments as part of their planning policies. In doing so they consult the Highway Authority. The preparation and application of Supplementary Planning Documents (SPD) and car parking standards are the responsibility of LPAs.
- 14.5** *In assessing a planning application HCC will consider the transport impact from the proposed provision and management of parking in and around the site.*
- 14.6** *HCC will recommend refusal to a planning application if the resulting transport impact from inappropriate parking provision or management contradicts LTP4 policies.*
- 14.7** Over provision of car parking opportunity is likely to facilitate unsustainable traffic growth, while under provision can introduce highway safety risks or significantly impede the free flow of traffic. These likely outcomes could lead to a 'severe' impact in development management terms.
- 14.8** A garage which is large enough for the average sized family car, plus cycles and some storage space will be considered as a parking spaces. If it is smaller than 6m x 3m it will not count towards the parking space allocation
- 14.9** Cycle parking provision should be made possible for all residential units. All flatted development should have secure communal cycle parking areas including visitor cycle parking areas. Communal cycle parking areas should be provided in accessible and secure locations with lighting.

- 14.10** The development of new residential and non-residential buildings presents an opportunity to increase the provision of EV charging infrastructure and future proofing associated car parks with electric vehicle charging infrastructure. Ultimately this is a decision for the Local Planning Authorities (LPAs) but HCC will work closely with them to ensure EV charging infrastructure is an integral part of development design. HCC will not enable large scale roll-out of on- street EV chargers (except for limited users/limited circumstances) and will instead support residents without access to a private drive or garage to access alternative charging facilities in local car parks and rapid EV charging stations. Scheme Promoters shall seek a Departure from Standards at the Master Planning Stage if they are considering seeking on-street EV charging facilities.
- 14.11** The need to provide good passenger transport connections as part of constraining parking levels is crucial. Such constraint must also go hand in hand with a robust way of managing and enforcing parking on-street.
- 14.12** It is reasonable to expect that many residents will choose to own cars, in the short term at least, and they should be able to drop off and pick up at their homes, but that does not mean they need to park their cars there. Rather, (with exemptions for those with protected characteristics) they could park their cars in communal multi-storey car parks at the edge of the development. For this they could pay a one-off purchase charge based on the construction costs and a monthly charge to cover ongoing maintenance. Households without cars would not be subject to these charges and therefore would not in any way subsidise the cost of parking provision for car owners.
- 14.13** Forcing cars to park in car parks on the outskirts not only decreases the convenience of owning a car, it also prevents cars from negatively impacting on public space and promotes modal shift for short, everyday journeys. Moreover, if and when private car ownership and use reduces due to the introduction of Mobility as a Service (MaaS) the scale and use of the car parking infrastructure can be changed.

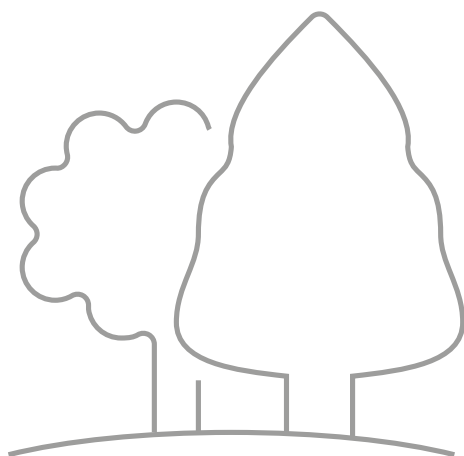
14.14 The following table summarises strategies to be considered for parking provision and management together with supporting, complementary strategies applied at the master planning stage that can help deliver Hertfordshire’s vision.

Core Strategy	Complementary Measures
Restraining car park levels off-street and through parking restrictions on specific roads	Smarter choices
Payment for residential parking space separate to housing	PTP
Providing alternatives to car ownership through Car Clubs	Cycle infrastructure
Making secure, easily accessible cycle parking provision for all residential units	Good public spaces
	Traffic demand management
	Good passenger transport
	Bike hubs



Planning for security

15.1 It is a requirement for Local Authorities, the police, and other partners to take account of community safety under the Crime and Disorder Act 1998 section 17 and the risks raised by the national police initiative 'Secured by Design' (SBD) should be addressed.



A practical process for site validation (project initiation) and master planning

- 16.1** The infographics throughout this sub-section set out a practical approach to site validation and master planning. While they show a logical, sequenced set of steps a degree of iteration may be required to ensure that each stage is covered in full.
- 16.2** The infographic below captures the key themed activities to be undertaken during these stages. The 'Familiarisation & site analysis' activity is very much key to the site validation stage alongside the initial considerations of green and blue infrastructure constraints.

1	2	3	4	5
FAMILIARISATION + SITE ANALYSIS	GREEN + BLUE INFRASTRUCTURE	SUSTAINABLE MOVEMENT + ACCESSIBILITY	SPATIAL ZONING + LAYOUT	PRIVATE + EMERGENCY VEHICLE ACCESS
				
PROMOTING A STRONG SENSE OF LOCAL CHARACTER AND IDENTITY THROUGH STRONG CONNECTIONS WITH THE SITES CONTEXT	MAXIMISE POTENTIAL FOR GREEN AND BLUE INFRASTRUCTURE THAT IS INTEGRATED WITH ALL AREAS OF THE SITE	MAXIMISE OPPORTUNITIES FOR WALKING AND CYCLING TO PROMOTE ACCESSIBILITY & CONVENIENT LINKS TO PUBLIC TRANSPORT FOR REGIONAL ACCESSIBILITY	CREATION OF A DEVELOPMENT THAT IS SAFE AND ADAPTABLE TO CHANGE AND PROMOTES CONVENIENT LINKS TO LOCAL AMENITIES	DISCOURAGE USE OF PRIVATE VEHICLES WHILST MAINTAINING ACCESSIBILITY FOR EMERGENCY AND SERVICE VEHICLES
The site should respond to its local character	Establish a clear green infrastructure network throughout the site	Set out convenient pedestrian and cycle network links	Mapping of proposed land uses to respond to local context	Minimise requirements for vehicle access points into the site and integrates within the local context
Articulate a strong sense of place	Promote biodiversity	Integrate pedestrian and cycle movement within the green and blue infrastructure	Consider convenient accessibility to key local amenities	Safeguard space for communal parking areas
Demonstrate a context led approach	Safeguard locally distinctive flora and fauna habitats	Promote use of pedestrian & cycle corridors through integrating placemaking opportunities	Layout that responds to the proposed green and blue infrastructure strategy	Promote connected legible links for emergency vehicles
Understand all potentially influential constraints and opportunities	Engrain SUDs principals to minimise potential future flood risk	Ensure convenient accessibility to public transport connections	Ensure natural surveillance of proposed pedestrian & cycle corridors	Plan for subtle service vehicle accessibility
Identify all key local connections and destinations	Green and blue infrastructure that is interwoven to create a holistic approach	Integrate bus gateways to promote bus priority	A legible street network that avoids unnecessary connected & circulatory routes	Integrate traffic management interventions to favour pedestrian and cycle movement over private vehicle
DEVELOPER REQUIREMENTS				
Site Constraints Drawings	Green Infrastructure Strategy	Pedestrian Accessibility Strategy	Land Use Zoning Strategy	Private Vehicle Accessibility Strategy
Site Integration Strategy	Blue Infrastructure Strategy	Cycle Accessibility Strategy	Street Hierarchy & Access Strategy	Emergency & Service Vehicle Accessibility Strategy
Statutory Site Surveys and Assessments		Public Transport Accessibility Strategy	Active Frontage Strategy	

16.3 The following suite of infographics show a typical example of a strategic development and the themes to consider during the site validation stage for LTP4 compliance testing.



16.4 These same themes will need to be considered at the Project Initiation stage and tested for LTP4 compliance at the Inception Gateway when identifying projects for inclusion in HCC's LTP4 Delivery Plan.

16.5 A base plan should identify the proposed development site or transport scheme setting out:

- The key trip-attracting destinations which will highlight the connections that need to be made or enhanced between those locations and the site.
- Green & Blue Infrastructure Constraints
- Local Character & Heritage Constraints

16.6 The base plan can then be overlaid to show the opportunities and constraints for walking connectivity to the key destinations.



16.7 The location and terrain of the site or scheme should enable:

- Safe and convenient pedestrian links throughout the site and to the surrounding streets
- Enhanced connectivity to leisure walking routes and public rights of way
- Connectivity to key local facilities and destinations within a 10-minute distance
- High quality walking corridors with a strong relationship to green and blue infrastructure

16.8 The location and terrain of the site or scheme should enable the following outcomes for cyclists:

- Safe and convenient connections to local cycle and strategic network
- Connectivity to key local facilities and destinations within a 20-minute distance
- High quality walking corridors with a strong relationship of green and blue infrastructure
- Priority links to town centre and sustainable transport hubs and connections



16.9 The site or scheme location should enable the following outcomes for passenger transport:

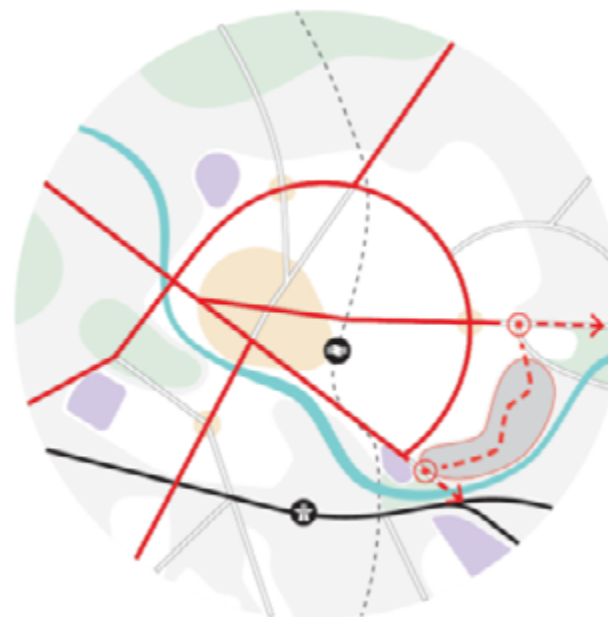
- Connection with surrounding public transport provision
- Links to key destinations (town centres, leisure, employment, education, healthcare etc)
- Bus priority promoted through restricted vehicle access that have a walk/cycling focus

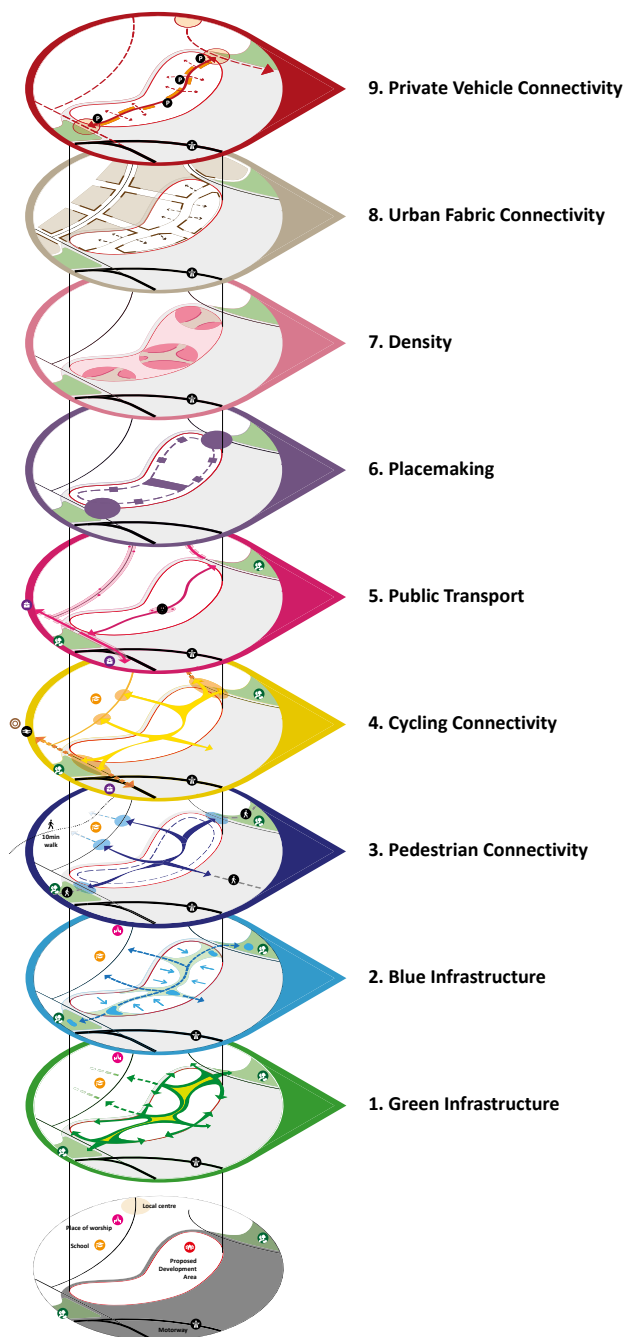
- Transport hubs located in a prominent, visible location with high levels of footfall close to main passenger transport routes and stops. Co-located or combined with other activities and a mix of uses such as residential, employment, leisure, health, community, and retail
- Stops along routes provided in convenient locations to promote access to all that are close to key pedestrian connections



16.10 The site or scheme location should enable the following outcomes for private vehicle connectivity:

- General vehicle access routes along key corridors throughout the site
- Restricted routes/corridors where sustainable connectivity is promoted
- Opportunities for communal parking areas with limited on street / driveway provision
- Enhancement to adjacent street connection to discourage access towards the town centre





16.11 Once the location and proposed nature of the development site or transport project has been validated as being policy compliant and the site constraints and risk assumptions have been identified the **Master planning stage** can commence.

16.12 A layered approach starting with consideration of Green Infrastructure and culminating in Private Vehicle Connectivity, as depicted in this infographic, should ensure that the development is landscape led and the LTP4 transport user hierarchy is applied.

16.13 It is quite possible that an iterative approach will be required to ensure that the themed layers are compatible and collectively deliver a practical, coherent Master Plan, but each iteration should start at the lower layer.

16.14 Consideration of 'Place & Movement' in each layer of the master plan should ensure that there is:

- A sequence of key spaces throughout the development that promote active use and permeability for active travel
- A hierarchy of spaces associated with the proposed local street network and pedestrian and cycle connectivity
- Enhanced placemaking provision promoting connectivity to the surround street network

16.15 The Master Planning Toolkit set out in section 17 below provides a useful summary of the core measures and strategies aimed at delivering the desired outcomes for each of the layers.



16.16 Starting with a site base plan, the first consideration should be the green infrastructure.

16.17 The proposed Green Infrastructure as captured in the emerging Ecology & Landscape Strategy should:

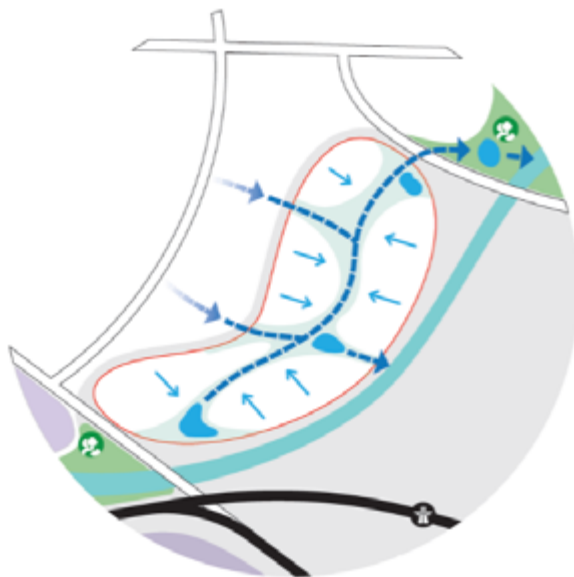
- Reflect local character to enhance links between urban and rural connectivity

- Promote a green infrastructure-led approach that integrates a fully integrated network throughout the development
- Ensure an integrated approach with blue infrastructure provision
- Safeguard space provision for generous walking and cycling networks
- Promote connectivity to surrounding green spaces and existing street green infrastructure



16.18 The proposed blue infrastructure as captured in the emerging Drainage & Flood Management Strategy should:

- Integrate features such as SuDs attenuation areas etc. throughout the development including the key public space design, green spaces and local street network
- Safeguard space provision for generous walking and cycling networks
- Promote connectivity to surrounding blue infrastructure and natural features
- Utilise existing topographical conditions to promote positive integration of SuDs



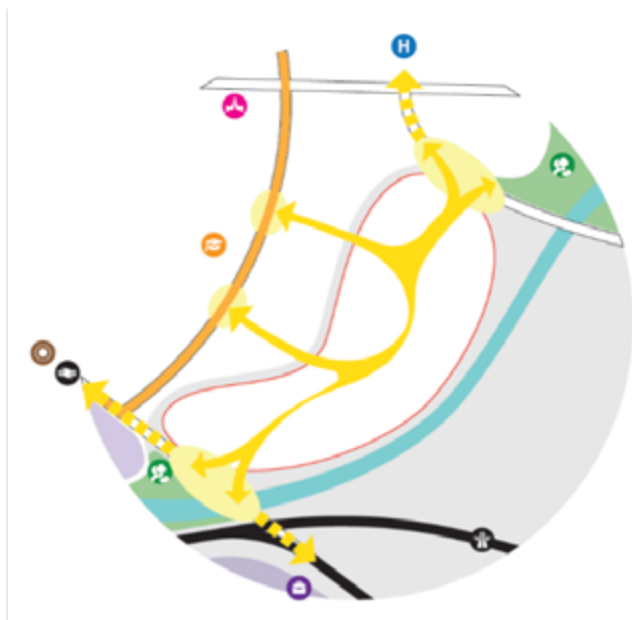
16.19 Consideration of walking connectivity should provide:

- A comprehensive network of interconnected connected streets, spaces and corridors throughout the development
- Safe and convenient pedestrian links throughout the site and to the surrounding streets
- Enhanced connectivity to leisure walking routes and public rights of way
- Connectivity to key local facilities and destinations within a 10-minute distance
- High quality walking corridors with a strong relationship of green and blue infrastructure

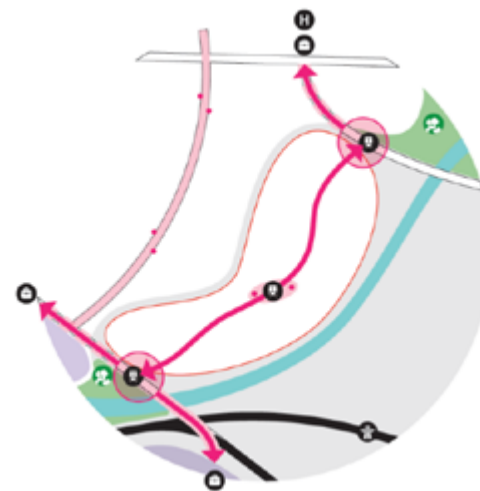


16.20 Consideration of cycling connectivity should provide:

- Safe and convenient connections to local cycle and strategic network
- Promote connectivity to key local facilities and destinations within a 20-minute distance
- High quality walking corridors with a strong relationship of green and blue infrastructure
- Ensure priority links to town centre and sustainable transport hubs and connections

**16.21** Consideration of passenger transport connectivity should provide:

- Connection with surrounding public transport provision
- Links to key destinations (town centres, leisure, employment, education, healthcare etc)
- Bus priority promoted through restricted vehicle access that have a walk/cycling focus
- Transport hubs located in a prominent, visible location with high levels of footfall close to main public transport routes and stops. Co-located or combined with other activities and a mix of uses such as residential, employment, leisure, health, community and retail
- Stops along routes provided in convenient locations to promote access to all that are close to key pedestrian connections



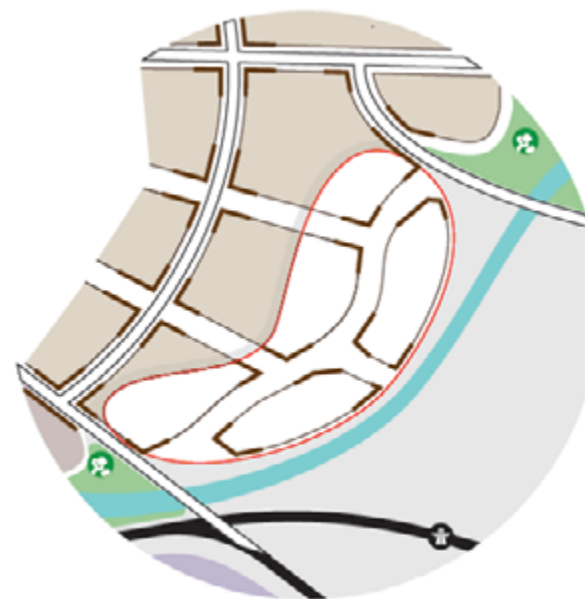
16.22 Proposed development densities can then be reviewed and set in the context of sustainable transport connectivity ensuring that:

- Higher density development is associated with key placemaking spaces
- Proposed development densities reflect local character



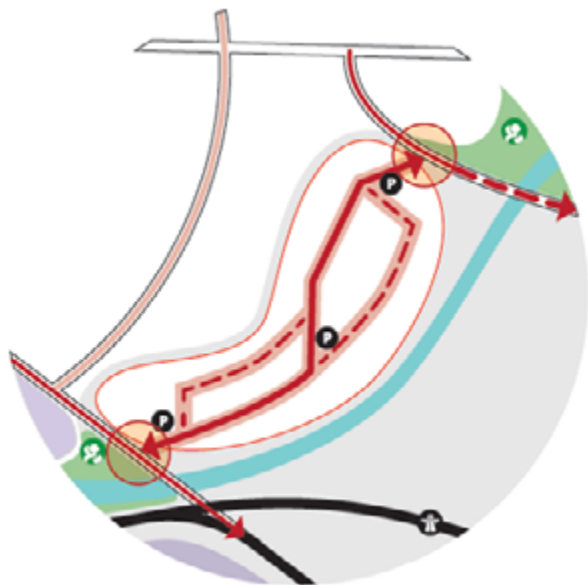
16.23 Consideration of urban fabric connectivity should aim to ensure that:

- Development areas promote seamless integration to the surrounding urban fabric
- Developments face outwards onto streets to promote integrated passive surveillance
- Development connectivity works alongside all other layers including, green and blue infrastructure, pedestrian and cycling connectivity, placemaking and density



16.24 In line with HCC's vision for good development supported by the LTP4 transport user hierarchy, private vehicle connectivity is the last layer to consider:

- General vehicle access is along restricted corridors in the site
- Routes and corridors are restricted where sustainable connectivity is promoted
- Communal parking areas and limited on street / driveway provision
- Enhancements to adjacent street connections discourage access towards the town centre



Master planning toolkit

17.1 The following table summarises how the core strategies can collectively deliver outcomes that support Hertfordshire's vision.

Category	Core measure / intervention	Outcomes
Placemaking	Urban density to increase towards local centres and sustainable transport provision. New residential settlements to be built around hubs and local centres to create walkable and self-sufficient neighbourhoods.	• Vibrant communities • Makes active travel more attractive • Shorter distances • Interchange with other modes
	Streets as places not just transport corridors. Increased seating, plants creating sociable places. New development designed to overlook streets and open spaces.	• Makes active travel more attractive • Safety and social benefits • People will want to stay longer and spend more money locally
	Street layout to integrate with surrounding areas. Cul-de-sac developments with little connectivity will be discouraged.	• Shorter distances • Makes active travel more attractive

Category	Core measure / intervention	Outcomes
Traffic Management	Filtered permeability in new and existing areas to ensure that travel across the locality is quicker, more direct, and convenient by active or passenger transport modes than by the private car.	• Makes active travel more attractive • Greater connectivity • Safety and social benefits
	20mph Areas (design for lower speeds on residential streets), implemented in existing residential areas where appropriate.	• Makes active travel more attractive • Safety and social benefits
	Conscious design of low-car / car-free streets through the prevention of through movements between communities by car. Requiring vehicles to leave the settlement in order to complete trips to jobs, community facilities and other opportunities helps make walking, cycling and local passenger transport options a natural choice.	• Makes active travel more attractive • Minimises car dominance and private car ownership/use • Safety and social benefits
Walking	High specification walking environment – generous footways, extensive greenery, no obstructions (e.g. parked cars), lighting, continuous footways across side roads.	• Makes walking attractive • Safety and social benefits • Reduced obstacles
	Careful master planning to ensure that key amenities and sustainable transport hubs are provided within walking distance (1km) of new and existing homes.	• Makes walking attractive • Shorter distances • Interchange with other modes • Greater connectivity
	Good public realm activated by mixed land uses to encourage social interaction and active spaces. Regeneration of the existing town centre public realm to achieve these objectives.	• Makes walking attractive • Safety and social benefits • Reduced obstacles
	Traffic volumes controlled through careful planning of the street hierarchy and use of measures such as filtered permeability.	• Makes walking attractive • Shorter distances

Category	Core measure / intervention	Outcomes
Walking	New walking/cycle links	• Makes walking attractive • Shorter distances
	The walking network should also connect with the surrounding countryside, making use of, and upgrading where necessary, local public rights of way.	• Makes walking attractive • Greater connectivity • Leisure
Cycling	Additions and improvements to the existing cycle infrastructure to create extensive, well connected and traffic free network. Add priority for cyclists at side road junctions and provide safe road crossings.	• Greater connectivity by bike • Improves safety/visibility for cyclists • Asserts priority of cyclists over cars
	Development of Sustainable Transport Links (STLs) , integrating walking, cycling and passenger transport and maximising the existing Public Rights of Way.	• Greater connectivity to town/station • Dedicated cycle routes without traffic • Interchange with other modes
	Improvement to onward cycle connections to nearby settlements, transport hubs, Public Rights of Way and the National Cycle Network.	• Greater connectivity by bike • Makes cycling more attractive • Leisure routes improved
	Establish sustainable transport hubs at key points to provide secure storage and interchange between bus and cycle facilities.	• Reduces barriers to cycling • Makes all-season cycling easier • Interchange with other modes
	Secure and convenient cycle storage at home and at key destinations and workplaces.	• Reduces barriers to cycling • Reduced scope for crime
	Ensure compatibility for cargo and family-orientated bikes that are typically larger than traditional bikes.	• Makes cycling attractive • Leisure / shopping possible by bike

Category	Core measure / intervention	Outcomes
Cycling	Town wide cycle hire at sustainable transport hubs. Cargo bike hire at key locations / residential areas.	• Greater connectivity • Makes cycling attractive • Interchange with other modes • Leisure / shopping possible by bike
Passenger transport	Enhancement of stations to include cycle parking and integration with local bus services.	• Makes passenger transport more attractive • Interchange across modes • Reduced car reliance
	A high-quality, high-frequency bus network to offer a ‘turn up and go’ service on key routes.	• Makes passenger transport more attractive • Greater flexibility and reliability
	Key destinations must be served rapidly and directly.	• Bus services can compete with cars
	Bus network potentially connecting to existing or proposed Rapid Transit routes, such as the A414 corridor Mass Rapid Transit proposals.	• Wider range of destinations • Reduced car reliance for longer trips • Improved image of passenger transport
	Journey time must give an advantage over the private car. Where buses share road space with cars, segregation/ priority for buses on main roads should be considered.	• Makes passenger transport more attractive • Service and journey time reliability • Dependability of local bus services
	Integrated ticketing across operators in a multi-operator scenario, or otherwise the use of simple fare structures using contactless technology.	• Reduced barriers to passenger transport use • Better-value fares for multiple journeys • Reduced boarding delays

Category	Core measure / intervention	Outcomes
Passenger transport	Sustainable transport hubs that provide information and tickets, cycle hire docking stations and cycle parking, drop off points for on-demand services and car club parking. Co-located or combined with other activities and a mix of uses such as residential, employment, leisure, health, community and retail	• Makes passenger transport more attractive • Interchange with other modes • Greater flexibility of travel options
	Common branding of local passenger transport services to be considered and explored with operators	• Makes passenger transport more attractive • Enhanced sense of an integrated local 'network'
Car parking	Car-free/low car development at appropriate locations near to rail stations and local passenger transport nodes, with careful management of car parking that relates to the provision of walking, cycling and passenger transport facilities.	• More efficient use of land • Makes non-car modes more attractive • Creates better places
	Parking should be provided in parking courts or on-street, not on-plot wherever possible. Car parking able to be adapted if no longer needed (reflecting its role as a 'meanwhile land use'. A portion of parking areas should be Electric Vehicle compatible.	• More efficient use of land • Makes non-car modes more attractive • Future proofing
	Parking should be leased on an annual basis rather than sold with the property, coupled with on-street parking restrictions.	• Awareness of the cost of car ownership • Revenue for sustainable travel initiatives
	Use of car clubs will be encouraged over private car ownership.	• More efficient use of land • Interchange with other modes • Reduced car ownership levels
Travel Plans	Robust and well-funded Travel Plans including measures such as free cycle hire membership, cycle training and PTP.	• Increased knowledge of travel options • Delivery mechanism for incentives
	Free taster season tickets as part of the Travel Plan packages.	• Makes other modes more attractive

Chapter 5

Providing for Place & Movement

Contents

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- 2 Applying the Place & Movement Matrix
- 3 Road Hierarchy
- 4 P2/M1: Active Travel Links (Non-Motorised Routes)
- 5 P2/M1: Sustainable Travel Links
- 6 P3/M1: Shared Space Residential Street Initiatives
- 7 HGV Restricted Routes



Introduction

- 1.1** To aid the practical application of the LTP4 policies Hertfordshire has developed a Place and Movement (P&M) matrix, which recognises the different functionalities that streets will need to have.
- 1.2** Some streets have a predominantly movement function (e.g. there are high volumes of vehicle movements on motorways) whilst others are places that people want to visit (i.e. they have a predominantly place function such as High Streets and Town Squares) but that the majority have a broader range of functions, some of which may be in conflict.
- 1.3** Place and Movement provides a basis for deciding which activities should be prioritised and where the balance of provision should lie.
- 1.4** HCC has based its approach on TfL's concept but adapted it to reflect the presence of both a rural and urban highway network creating a Hertfordshire Place and Movement Assessment matrix.



- 1.5** A good sense of 'Place' is exemplified by the components considered as success factors in the 'Healthy Streets' initiative that also complements the Place & Movement concept.

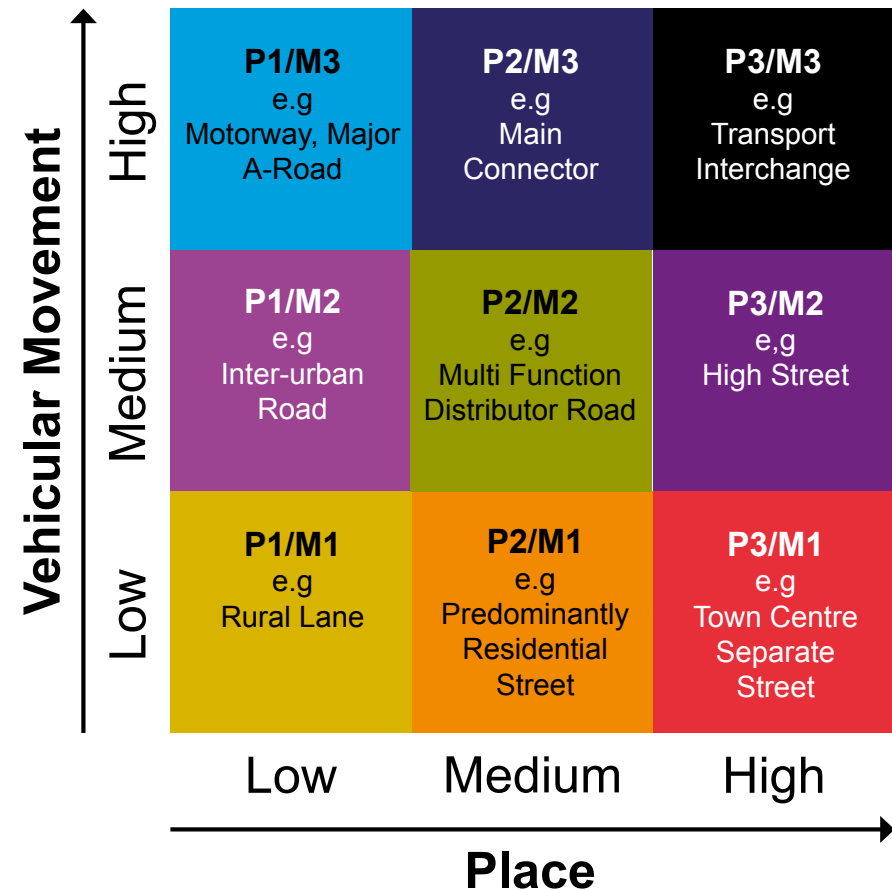


Source: Lucy Saunders

- 1.6** A sense of 'Place' is not just exemplified by its usage in a local built environment. Areas of High Place Importance also include conservation areas, designated Quiet Lanes and the Chilterns Area of Outstanding Natural Beauty (AONB), for example.
- 1.7** It is also equally important that the Healthy Streets success factors are considered as success factors for Active Travel Links (see sub-section 4) and Sustainable Travel Links (see Paragraph 5), if they are to be used as intended
- 1.8** The P&M matrix will help identify appropriate highway provision at the master planning stage.
- 1.9** This Chapter also introduces Active Travel Links for non-motorised travel use and Sustainable Travel Links for active travel users, buses and, potentially controlled local access for other motor vehicles.

Applying the Place & Movement Matrix

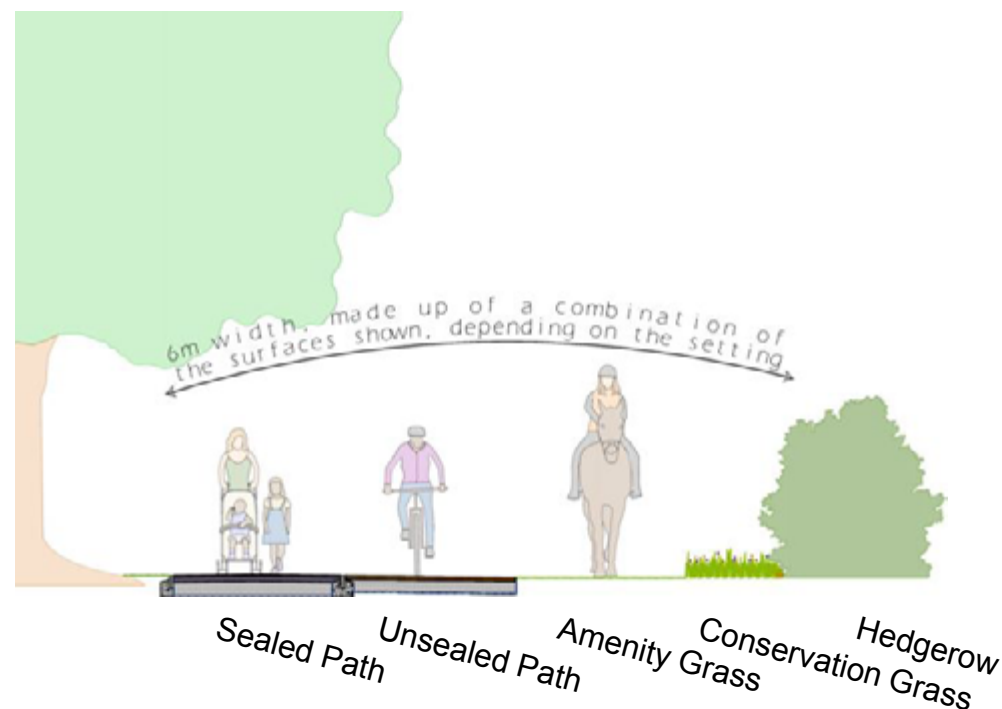
- 2.1 Nine categories have been defined and ordered from a high to low significance in relation to the place or movement function with each cell of the matrix.
- 2.2 For simplicity movement is largely categorised in terms of likely vehicle movement. The exception to this is the transport interchange category where there are also likely to be high movements of passenger transport users.
- 2.3 The P&M descriptors are shown in more detail in the following on the next page.

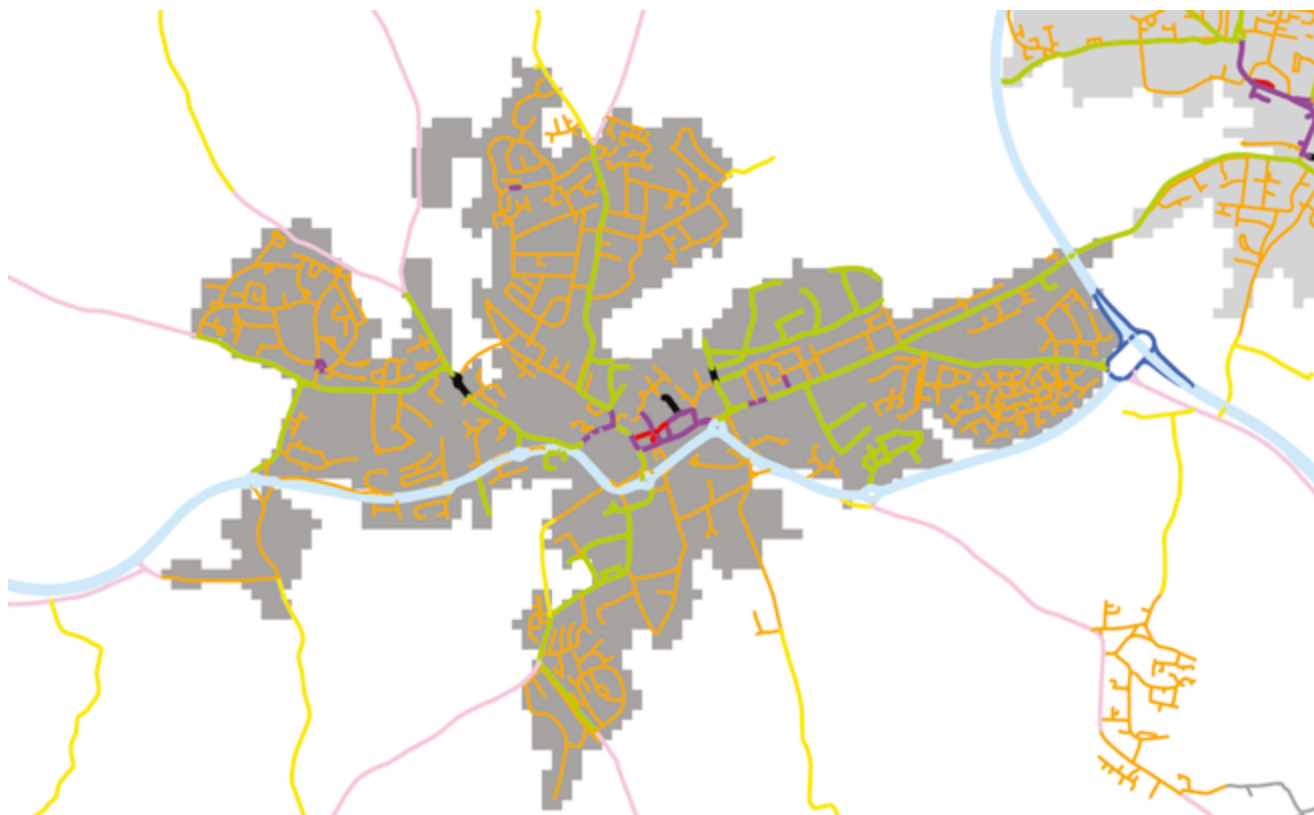


Category	Description
P1/M3	Major A road or Motorway or Primary Road connecting two large urban settlements and carrying more strategic traffic. Identified using the Strategic Road Network, Primary Road Network and Major Road Networks.
P2/M3	Main Connector Linking a strategic road (P1/M3) usually to a settlement. The roads should be over 5.5 m wide and are predominantly A roads.
P3/M3	An urban interchange between two or more modes of transport, for example a railway station/bus station/taxi rank/cycle hub.
P1/M2	Inter-urban road (A, B or C but excluding the SRN and MRN network), above 5.5 metres and with a centre line, connecting two settlements in a rural setting.
P2/M2	Multifunctional inner urban/suburban roads, typically A, B or C roads and have bus routes, connecting different parts of an urban settlement and non-residential access road including to and in industrial estates. P2 /M2 also connect to P1/M3 and P2/M3 road category types in an urban setting.

Category	Description
P3/M2	Inner urban street with a predominance of retail (3 premises in 15m) and other commercial land uses, e.g. high street, local shopping parades, retail parks.
P1/M1	Minor road in rural setting (in countryside or in a hamlet or small village). Typically narrow roads, with widths under 5.5 metres
P2/M1	Inner urban/suburban/rural residential street identified using address base premium residential properties and other land use datasets where the presence of dwellings has been identified on at least one side of the carriageway. Designated Quiet Lanes and lanes in the Chilterns Area of Outstanding Natural Beauty (AONB). Active and Sustainable Travel Links
P3/M1	Inner urban road or square at the core of a settlement (predominantly retail), Shared space and often block paving, with no roadside kerb. High people movement but little to no motorised vehicle movement. Some Town Centres will not be fully identified on the P&M network as they may not include adopted Highway. Shared Space Residential Street initiatives.

- 2.4** All highways across the network in Hertfordshire have been assigned an appropriate category from the matrix.
- 2.5** The figure below shows an example of the categorisation in Hertford and illustrates that parts of the network identified with high place functions are clustered around the core shopping areas and are fed by urban distributor roads with transport interchanges around the bus station and railway stations. The A414 is classed as a major interurban road (due to its inclusion on the Major Road Network (MRN)) but this interacts with a number of roads which have a higher place function, illustrating the clashes in priorities between different user groups.
- 2.6** To aid the practical application of this policy **all new or improved highways will be assigned an appropriate character category selected from Hertfordshire's Place and Movement matrix through the LTP4 Compliance Test Process** described in Part 1 Chapter 3.
- 2.7** Developments of all sizes will be expected to reflect the adjacent existing Place & Movement category or provide a sympathetic transition from that category into another.





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For Key to road centreline colours, please see page 123.

- 2.8** It is strongly recommended that scheme promoters agree Place and Movement Categories with Hertfordshire County Council at the Master Planning stage, during early pre-application discussions.
- 2.9** Part 3 Chapter 1 includes design menu cards that set out appropriate features and design standards for each P&M category.

Road Hierarchy

3.1 The Highway Authority maintains and develops a hierarchical structure for its roads, the hierarchy being based on the road's intended function. The aim of this approach is to assist in ensuring traffic is concentrated onto roads appropriate to its journey purpose.

3.2 The Road Hierarchy is set out below.

Primary Roads

These form the Primary Route Network (PRN), providing the links between the most important traffic origins and destinations. They consist of motorways, trunk roads and the most important County 'A' roads.

Other than motorways, primary roads can be identified by their green backed signs. Wherever possible, through traffic is encouraged to use these routes, and they form the HCC's advisory lorry route network.

Primary roads will rarely be modified as a result of development proposals. In any such cases, early consultation with HCC, and National Highways in the case of motorways and trunk roads, will be required to determine design requirements.

The A10, A41, A405, A414, A505, A602 in Hertfordshire form part of the country's Major Road Network (MRN). The MRN forms a middle tier of the country's busiest and most economically important local authority 'A' roads, sitting between the national Strategic Road Network (SRN) i.e. the nation's motorways and trunk roads, and the rest of the local road network. This designation recognises the importance of investment in these routes via Regional Transport Bodies, but does not make a difference to Hertfordshire's network management operational strategies.

Main Distributors

These roads consist of the County 'A' roads which do not form part of the PRN. There are two types:-

- Rural main distributors connect the main towns with the PRN and link neighbouring towns in the PRN grid.
- Urban main distributors are the main roads that distribute traffic in towns, around town centres and link town centres and main industrial areas to the PRN.

Main distributors can be identified by their white-backed signs and a single carriageway standard will usually be adequate.

Through traffic that could use the PRN will be discouraged from using main distributor roads.

New access onto these roads would not normally be allowed. If access to or improvement of a main distributor is required as a result of a development proposal, early consultation with HCC will be necessary to obtain agreement and to determine design requirements.

Secondary Distributors

Rural secondary distributors connect the important rural settlements to each other and to the Main Distributor network. They are the main access roads to rural areas.

Urban secondary distributors connect important urban neighbourhoods to each other and to the Main Distributor network. They also form the distributor routes through large residential areas.

In both rural and urban areas, these routes will normally be designated 'B' roads and signed as such. It is appropriate for these to be bus routes.

Local Distributors

Rural Local Distributors are generally country lanes that give access to adjacent land, or roads that connect minor settlements.

Urban Local Distributors generally provide routes through residential areas and are often estate roads.

They provide the link between the Secondary Distributors and residential roads. Local Distributors do not have signed numbers and are likely to be bus routes.

Access Roads

Access roads provide direct access to housing and other developments. They consist of all roads not falling in the Primary Road, Main, Secondary or Local Distributor categories.

Industrial Roads

Industrial roads provide access to premises in predominantly industrial or commercial areas and link such areas to distributor roads and the wider highway network.

Industrial roads are generally unadopted (i.e. private streets). Such roads, which serve commercial development, will normally only be considered for adoption by the HCC if the premises served are in at least two freehold ownerships and where there is a clear benefit to the public.

- 3.3** The Place & Movement framework does not replace the road hierarchy but complements it by showing how development can be designed to fit into and strengthen the hierarchy.
- 3.4** This will improve safety, discourage the use of residential roads for through traffic, and create safer conditions for all users of residential roads, which is particularly important for vulnerable users such as pedestrians and cyclists.



P2/M1: Active Travel Links (Non-Motorised Routes)

- 4.1** These are non-motorised routes away from the County's main road system offer a valuable component to walking, cycling and equestrian infrastructure.
- 4.2** Such routes, when designed well, will provide cost effective provision of key inter-urban and intra-urban routes, whilst delivering the same success factors as those demonstrated in Healthy Streets, namely
- A clean, pleasant, quiet place to travel and connect with nature or communicate with travel companions including places of shade, shelter and rest.
 - Increased opportunity to build walking or cycling into daily routines as an enjoyable, healthy part of the working/school day, an effective way to increase low activity levels
 - A safe, accessible and inclusive walking and cycling environment particularly for those developing their confidence and riding skills
- A connection with the environment. Non-motorised routes often pass-through natural areas of countryside and greenspace. A 2019 study by the University of Exeter showed that people who spend 120 minutes in nature a week consistently reported having higher levels of health and well-being.
- 4.3** Future development offers opportunities to enhance desirable routes or create new ones that can link into the existing non-motorised transport network.
- 4.4** Active Travel Links are also key to providing 'filtered permeability' through new developments, providing exclusive, direct connections between key origins and destinations for non-motorised traffic, thereby giving advantages over motorised traffic, which must use alternative, less convenient routes.

4.5 Development that successfully creates opportunities for Active Travel will deliver a range of benefits including:

- Improved quality of life
- Raised levels of physical activity, health and wellbeing
- Significant economic benefits for both the development itself and the wider area
- Reduced environmental impact of travel

4.6 Active Travel Links should have a formal status through the creation of, or conversion to the following:

Use	Status
Walking	Public Footpath
Walking, horse riding and cycling	Public Bridleway
Walking, cycling, horse riding and horse-drawn carriage driving	Public Restricted Byway

4.7 The nature and proposed status of Active Travel Links should be discussed with HCC at the Master Planning Stage and captured in the Outline Planning Application, or Full Planning Application (if there is no Outline Planning Application).



P2/M1: Sustainable Travel Links

5.1 Sustainable Travel Links can provide connections, as appropriate, for:

- Passenger Transport
- Active Travel modes
- Emergency services
- Limited local access for motor vehicles by design
- Limited local access for motor vehicles by regulation

5.2 Examples of Sustainable Transport Links include:

- Busways or bus gates with provision for active travel in the same corridor
- Cycle streets which provide high quality walking and cycling connections in urban areas whilst providing limited access to motor vehicles. They are streets designed so that cycles are the vehicles that dominate visually, and motorised traffic is tolerated as a guest.
- Quiet Streets and Quiet Lanes

5.3 In particular, STLs can support the objectives of providing ‘filtered permeability’ through new developments giving advantages over other motorised traffic, which must use alternative, less convenient routes.

5.4 Cycle Streets, for example may create the ‘leaky cul-de-sac’ from which the only onward journeys are made via an Active Travel Link for walking and cycling only.

5.5 Sustainable Travel Links should have a formal status through the creation of, or conversion to the following:

- Byways Open to All Traffic (sometimes unsurfaced)
- All-purpose highway restricted by Traffic Regulation Order
- Quiet Lane

5.6 Quiet Lanes are an official designation under The Quiet Lanes & Home Zones (England) Regs 2006 and are places where prescribed local activities may be carried out as well as being public thoroughfares. The speed of vehicles must be low enough to permit such activities to be enjoyed safely by people of all ages and abilities. Community involvement is an essential element for their success

- 5.7** Quiet Lanes designations tend to be applied to existing highways and may be useful in applying to the existing network surrounding a new strategic development, for example, but the replication of a traditional rural lane as a Quiet Lane in a new build is unlikely to fully meet all the objectives for a Sustainable Travel Link.
- 5.8** The nature and proposed status of Sustainable Travel Links should be discussed with HCC at the Master Planning Stage and captured in the Outline Planning Application, or Full Planning Application (if there is no Outline Planning Application).



P3/M1: Shared Space Residential Street Initiatives

6.1 Shared Space Residential Street Initiatives are aimed at promoting a high sense of place, where health and social wellbeing are as important factors as active travel.

6.2 Such initiatives have been introduced nationally and internationally, captured as:

- Home Zones
- Low Traffic Neighbourhoods
- Vehicle Restricted Areas
- Pedestrian prioritised streets
- Informal streets
- Enhanced streets
- Stellplatzfrei streets ('free from parking space streets')
- Woonerven ('living streets' in the Netherlands)
- 'Mews Courts' and 'Housing Squares' for higher density developments grouped around a Shared Surface road
- School Streets

6.3 HCC encourages the promotion of such initiatives and will welcome discussions about the principles of potential proposals at the Master Planning stage, so as to inform the development of the planning application.



HGV Restricted Routes

- 7.1** The movement of goods in Hertfordshire is primarily by road, with around 2.35 million vehicle kilometres travelled by Heavy Goods Vehicles (HGVs) in Hertfordshire each day. Whilst the Primary Route Network is designed to cater for high HGV traffic flows, access to the final destination via local roads can have major impacts on the environment and on congestion in both town centres and rural areas.
- 7.2** There are routes with weight and height restrictions and roads where there is narrowing of the carriageway to a single lane with traffic controlled via priority signing or traffic signals. There are also areas across the County where there are environmental lorry bans in operation. Details of these restricted routes can be obtained from HCC's Network Management Team on 0300 123 4047.



Chapter 6

Maintenance & Operation

Contents

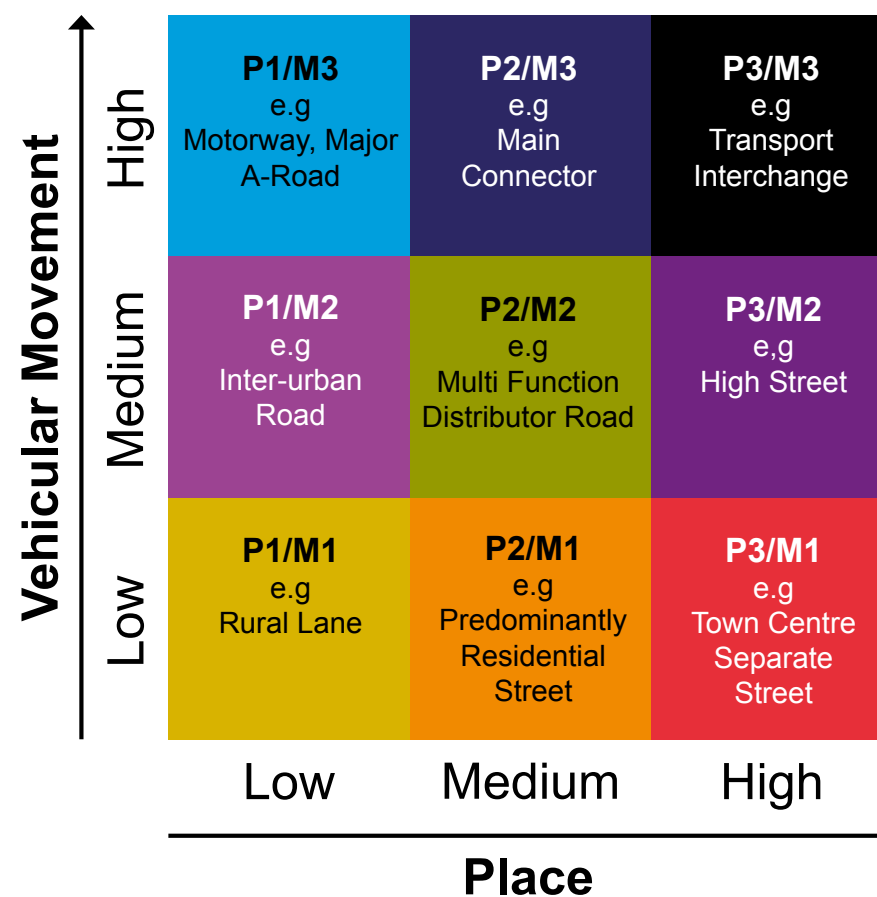
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Introduction

- 1.1** This Chapter summarises Hertfordshire County Council's approach, as Highway Authority, to maintaining and operating its highway network.
- 1.2** An understanding of the approach including the life cycle of assets, the selection of features and materials that HCC is prepared to adopt and maintain will influence master planning, planning application preparation, detailed design and the long-term stewardship of new schemes and developments.
- 1.3** To aid the practical application of the LTP4 policies Hertfordshire has developed a Place and Movement (P&M) matrix, which recognises the different functionalities that streets will need to have.

- 1.4** The application of the P&M matrix helps identify appropriate approaches to maintenance and operation.



Minimising Life Cycle Costs

- 2.1** HCC has adopted an Asset Management Strategy that considers factors like life cycle costs, carbon footprint, ease of maintenance and future disruption to the network when making choices for materials, design and the like. This means that the option that appears to be cheapest or simplest up-front is frequently not the optimal one in the long term. The choices set out in this design guide reflect this approach.
- 2.2** *The designer's objective should be to provide a design that is fit for purpose to meet the Place & Movement Category designation whilst keeping the future maintenance liability to a minimum.*
- 2.3** It is necessary to consider the planned, routine and reactive costs that are likely to be incurred over the typical lifecycle of the assets concerned. Elements in the design that are likely to create an unusually high level of maintenance requirement in one or more of these whole life cost areas should be reconsidered.
- 2.4** A scheme or development that uses unusual techniques, expensive, hard-to-maintain or hard-to-resource materials can become unattractive and cease to serve its intended purpose even if special funding and stewardship arrangements are in place.
- 2.5** The life cycle of highway assets needs to be a key consideration during the initial design and specification and in the planning for the long-term stewardship of new schemes.
- 2.6** A Whole Life Management Plan will be required to provide clarity as to who is going to own the various highways and transport assets, who is going to maintain and manage them and how they are going to be funded.
- 2.7** An indicative Whole Life Management Plan shall be submitted with any Outline Planning Application setting out broad principles.
- 2.8** A draft Whole Life Management Plan shall be submitted at the Full Planning Application stage setting out proposals for each asset type.
- 2.9** The Approvals version shall contain detailed arrangements asset by asset for inclusion in the section agreements.
- 2.10** The Adoption version shall include maintenance requirements for the as-built assets.

Safe & Operational Maintenance Standards

- 3.1 A primary objective of Hertfordshire's Highways Infrastructure Asset Management Plan is to ensure highway assets reach their full, service potential for as long as possible, whilst minimising their lifecycle costs.
- 3.2 *Given the continued pressure on public sector revenue spending, HCC has adopted a strategy of maintaining all highways to Safe & Operational standards.*
- 3.3 *In turn, the Safe & Operational tenet controls the selection of features and materials that HCC is prepared to adopt and maintain.*



Areas of High Place Importance

- 4.1 *P3 Category highways have been designated as Areas of High Place Importance which may have more attractive features and finishes (albeit still restricted and controlled) and, subject to suitable funding arrangements, may be maintained to a higher serviceability level.*
- 4.2 Other Areas of High Place Importance include conservation areas and the Chilterns Area of Outstanding Natural Beauty (AONB), which covers 833 sq. km. Parts of it are in the Hertfordshire districts of Dacorum and North Hertfordshire.
- 4.3 Specific guidance on the AONB is given in the document Environmental Guidelines for the Management of Highways in the Chilterns which can be downloaded.

Hertfordshire County Council's Network Management Duty

- 5.1** Road users have differing expectations of the highway network. Reliable journey times are important to the majority of users. HCC and utilities providers have powers to occupy the highway in order to maintain and upgrade their equipment for the benefit of their customers.
- 5.2** The Traffic Management Act gives HCC the powers and duty to do all that is reasonably practicable to manage the network effectively to keep traffic moving, whilst accommodating the needs of roadworks.
- 5.3** *A key objective must be to design a scheme that minimises disruption and inconvenience to highway users during construction and, subsequently when the development is in use.*
- 5.4** Planning should take account of development and community plans for the area and, where possible, make provision for future developments, so as to avoid additional major works later to upgrade the infrastructure;
- 5.5** Designs should enable both construction and future maintenance to be carried out in ways that minimise disruption for all highway users and the public.
- 5.6** Assets should be designed for long-term durability to reduce the need for further works in subsequent years.



Lighting

- 6.1** Due consideration should be given to Hertfordshire's illumination strategy at the master planning stage as it may influence the shape and form of the proposed development and streetscape.
- 6.2** The highway is only illuminated where justified based on the proven primary need for maintaining highway safety and accessibility. Lighting has a wider social and economic role with regard to: the potential of helping to prevent and reduce crime and disorder and can contribute to commercial and social use at night.
- 6.3** These exceptions are generally in the P3 category of the 'Place & Movement' matrix.
- 6.4** *Most highways in towns and villages are in the P2 category and subject to Part Night Lighting (PNL) with staged dimming through a Central Management System, unless they meet the exception criteria, in which case they are subject to full night lighting.*

Drainage & Flood Prevention

- 7.1** As the adopting authority HCC needs to be satisfied that the following aspects of road drainage and water management have been considered and adequately provided for:
- Impacts on surface waters including:
 - water quality (routine runoff and spillage)
 - hydromorphology
 - Impacts on groundwater including:
 - water quality (routine runoff and spillage);
 - groundwater levels and flows;
 - groundwater dependent terrestrial ecosystems;
 - Flood impacts
- 7.2** Traditionally the primary objectives of drainage solutions have been to promote highway safety and protect the highway formation through providing a piped network system that rapidly dispose of water into outfalls outside the highway boundary.

7.3 *Hertfordshire now seeks solutions that will prevent floods but also support the wider policy objectives of LTP4 and HCC's Local Flood Risk Management Strategy 2 (2019-29).*

7.4 In particular, solutions need to demonstrate that:

- Flood and groundwater will be managed to protect highway assets and to minimise nuisance, damage or health and safety hazards.
- Pollution & contamination will be controlled and mitigated.
- The quality of public space and local landscape will be protected and enhanced, thereby encouraging active travel.
- Environmental mitigation or net gains for biodiversity, habitats and natural landscape will be achieved, contributing to the target of a 20% increase in green and blue habitats and spaces, across Hertfordshire.
- Whole life costs are optimised and fundable.

7.5 Scheme Promoters shall prioritise flood management solutions:

1. Infiltration;
2. To a surface water body
3. To a surface water sewer or drainage system
4. To a combined sewer.

7.6 Sustainable and nature based solutions (NBS) shall be prioritised, and designed in collaboration with ecological expertise.

7.7 It should be noted that HCC will only adopt the highway drainage systems that only manage surface water that falls onto the adoptable area.



Structures

- 8.1 Structures are inherently expensive to provide and maintain and HCC charges commuted sums for their long-term maintenance as per Part 1, Chapter 15: Charges & Fees
- 8.2 Scheme Promoters should establish whether the need for structures can be avoided during master planning, before the planning permission's 'red-line' is set and they then become a necessity.



Hertfordshire's Winter Service

- 9.1 HCC prioritises its winter service operations and does not grit all its roads during icy periods.
- 9.2 HCC does not provide new grit bins, but it does provide salt to organised self-help groups.
- 9.3 *Scheme promoters and designers should give due consideration to how access in the public realm is to be maintained safely during periods of snow and ice*
- 9.4 More details can be found on the Winter Weather page on the HCC website.

Providing for Utilities

10.1 Whilst service providers normally prefer to place their plant beneath the highway verge or footway, this is not always possible in modern estate layouts.

10.2 *Innovative solutions to design problems are encouraged, but the future accessibility of underground equipment with minimal disruption must be ensured at an early stage otherwise adoption may be prejudiced later on.*



Adoption and Stewardship

11.1 HCC's approach to adoption is set out in Part 1, Chapter 16: Adoption Principles.

11.2 Given its aspirations to promote its 'Place & Movement' objectives, which suggests the need for quality street scape, HCC is happy to discuss with Scheme Promoters innovative arrangements for the provision, maintenance and operation of the streetscape for new strategic settlements or the regeneration of strategic sites.

11.3 However, this will be conditional on that the arrangements will be at no nett extra cost to HCC over the whole life of the assets when compared to the costs of a scheme conforming to the requirements set out in this guidance and that they create no extra carbon impact.

11.4 The interface between adopted and non- adopted highway and the long-term stewardship of the resulting public and private realm are strategic issues, which can influence the shape and feel of the development significantly. As such early discussions between the scheme promoter and HCC as Highway Authority are strongly recommended.

Enforcement

12.1 To meet the needs of road users in accordance with the priorities set by the LTP and the appropriate place and movement functions of the network, some parts need to be reserved for certain road users at the exclusion of others and elsewhere traffic may need to be managed pro-actively to ensure it moves safely and efficiently. Pro-active enforcement through unattended camera is necessary at some locations to ensure that the local traffic management objectives are achieved. Details can be found in the document 'Hertfordshire County Council's Approach to Enforcement of Moving Traffic Contraventions 2023-28'.

12.2 All highway improvements and provision of new highways that have sites which are potentially eligible for unattended camera enforcement should be designed to be conducive for that enforcement, so as to avoid subsequent, additional costs to make them enforceable at a later date. The degree of passive provision should be agreed between the Scheme Promoter and HCC.

12.3 A period of monitoring is required after trafficking a new or improved highway to confirm whether enforcement by unattended cameras is required or not. This does not prevent enforcement being a working assumption during the design and delivery as that may influence the degree of provision being made at those stages.

12.4 On-street parking enforcement in Hertfordshire is undertaken by the District and Borough Councils under agency agreements. The relevant district and borough councils should be consulted on any proposals for the introduction of parking restrictions at the planning stage to ensure that they are willing and able to undertake enforcement.

